Service Manual

ViewSonic VX1935wm-1

Model No. VS11307

19” Color TFT LCD Display

(VX1935wm-1_SM Rev. 1a Sep. 2006)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	9/18/2006		Initial Release	Jamie Chang

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1. Precautions and Safety Notices

1. Appropriate Operation

(1) Turn off the product before cleaning.

(2) Use only a dry soft cloth when cleaning the LCD panel surface.

(3) Use a soft cloth soaked with mild detergent to clean the display housing.

(4) Disconnect the power plug from AC outlet if the product is not used for a long period of time.

(5) If smoke, abnormal noise, or strange odor is present, immediately switch the LCD display off.

(6) Do not touch the LCD panel surface with sharp or hard objects.

(7) Do not place heavy objects on the LCD display, video cable, or power cord.

(8) Do not use abrasive cleaners, waxes or solvents for your cleaning.

(9) Do not operate the product under the following conditions:

- Extremely hot, cold or humid environment.
- Areas susceptible to excessive dust and dirt.
- Near any appliance generating a strong magnetic field.
- Place in direct sunlight.

2. Caution

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

3. Safety Check

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

4. Power Supply Requirements

The external AC power operating range shall be from 90 to 264Vac

5. LCD Module Handling Precautions

5.1. Handling Precautions

(1) Since front polarizer is easily damaged, pay attention not to scratch it.

(2) Be sure to turn off power supply when inserting or disconnecting from input connector.

(3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.

(4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.

(5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.

(6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.

(7) Do not open nor modify the Module Assembly.

(8) Do not press the reflector sheet at the back of the module to any directions.

(9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.

(10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.

(11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example),

do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.

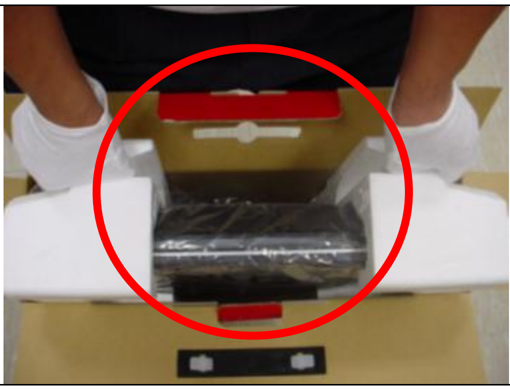
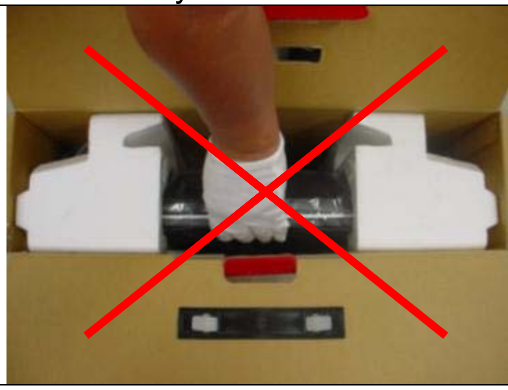
(12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

(13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source, or be applied exemption.

(14) The LCD module is designed so that the CFL in it is supplied by Limited Current Circuit.

Do not connect the CFL in Hazardous Voltage Circuit.

5.2 Handling and Placing Methods

Correct Methods:	Incorrect Methods:
1.Take out the monitor with cushions	1.Taking out the monitor by grasping the LCD panel. That may cause ”Mura”
	
2.Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	2.Surface of the LCD panel is pressed by fingers and that may cause ”Mura”.
	
	
3.Place the monitor on a clean and soft foam pad.	3.Placing the monitor on foreign objects. That could scratch the surface of the panel or cause “Mura”.
	

2. Specification

FEATURES		VX1935
TFTLCD PANEL 1st HSD HSD190MGW1-A	Size	19 " wide
	Luminance (Typ)	300 cd/㎡
	Contrast Ratio (Typ) *1	700:1
	Colors	16.2 M (6 bits + 2 bits FRC)
	Response Time *1	5 ms (on/off)
	Viewing Angle (H/V)	150 ° / 135 °@ CR>10
	Recommend resolution	1440x900@60Hz
Input Signal	Analog	Yes (75ohms, 0.7/1.0 Vp-p)
	Digital	Yes
Sync Compatibility	Separate Sync	Yes
	Composite Sync	No
	Sync on Green	No
Compatibility	PC	Yes
	Power Mac	Yes
	TV Box (NextVision 6)	Yes
Power Voltage	AC 100-240V, 50/60Hz	Yes
Power Consumption	On Mode(Max)	≦ 36 W (Energy Star Ver4.0 Tier2)/
	Off Mode (Max)	≦1 W
Audio	1.5W / THD 0.5% (Max)	Yes
Ergonomics	Tilt (20 ° - -5 °)	Yes
	Swivel	No
	Pivot	No
	Height Adjust	No
OSD Control	[1] [2] [⏻][▼] [▲]	Yes
Dimension	Physical (W x H x D)	450 x 434 x 210mm
	Package (W x H x D)	545*515*162mm
Weight	Physical (Net Weight)	5.6 Kg / 12.3 lbs
	Package (Gross Weight)	6.6 Kg / 14.5 lbs
Operating Condition	Temperature (℉/℃)	32℉-104℉ / 0℃-40℃
	Humidity (%)	20 % - 80 %
Storage Condition	Temperature (℉/℃)	-4℉-140℉ / -20℃-60℃
	Humidity (%)	10% - 90 %
Regulation	CB ; MPR II ; UL ; CUL ; FCC-B (ICES) ; TUV-S IRAM ; NOM ; Energy Star ; CE ; NEMKO ERGO ; GOST-R ; HYGIENIC (20 copies) ; SASO ; BSMI ; C-TICK ; PSB ; CCC ; WEEE ; ROHS	

- **Audio Interface (Speaker Specification)**

Line input signal	1.0 Vrms
Line input impedance	> 10 kOhm
Maximum Amp power output (Watt)	1.2 W (RL=8Ω)
Speaker Power rating(Ω/Watt)	8Ω/ 1.5 W (MAX)
THD	≦ 8% (Maxmum output @ 1KHZ)
Signal to Noise Ratio	50 dB
Frequency response	500 Hz – 20 Khz
SPL.	80 ± 3 dB / 10.W • 0.5m
Line input connection	3.5 mm stereo jacks

Vibration	There should be no audible vibration resonance at volume=100%(input signal within 1.0 Vrms)
Screen image	There should be no affect on the screen image stability under any conditions
Connector PC99 requirement Audio in	Lime Green pantone # 577C
Cable type / length	3.5mm stereo cable / 1.8m length
Audio DPMS	SPEAKERS STAY ON WHEN THE REST OF THE MONITOR IS IN POWER SAVING NOTE: THERE IS NO GUARANTEE <1 W AT POWER CONSUMPTION IN ACTIVE OFF MODE, WHEN THE AUDIO CABLE IS CONNECTED

- **Panel Characteristics:**
  1st Source Panel

Model number	HSD HSD190SGW1-A
Type	TN TYPE WITH RSDS INTERFACE
Active Size	19" WIDE ; 408.24 (H) x 255.15 (V)
Pixel Arrangement	RGB VERTICAL STRIPE
Pixel Pitch	0.2835(H) X 0.2835(H) MM
Glass Treatment	ANTI GLARE (HARD COATING 3H)
# of Backlights	4 CCFL ; TOP & BOTTOM EDGE SIDE
Backlight Life	40,000 HOURS (MIN)
Luminance (5-point) – Condition: CT = 6500K, Contrast = Max, Brightness = Max, Inverter Current=6.5mA	300 CD/M2 (TYP) 240 CD/M2 (MIN AFTER 30 MINUTE WARM UP)
Brightness Uniformity	≧70% ENTIRE AREA (MIN)
Contrast Ratio *1	700:1 (TYP), 450:1 (MIN)
Color Depth	16.2 MILLION COLORS (6 BITS + 2 BITS FRC)
Viewing Angle (Horizontal)	@ CR>10 Typical: 150º Minimum: 130º @ CR>5 Typical: 170º Minimum: 150º
Viewing Angle (Vertical)	@ CR>10 Typical: 140º MINIMUM: 120º @ CR>5 Typical: 160º Minimum: 140º
Response Time *1 10%-90% @ Ta=25°C	Typical = 5ms (Tr =1.5 ms,Tf =3.5 ms) Maxmum = 10ms (Tr =3 ms,Tf =7 ms)
Panel Defects	Please see Panel Quality Specifications.

*1 Test conditions: Inverter Current=6.5mA, Color Temp.=User Mode, OSD: Brightness=100%, Contrast=100%

ELECTRICAL REQUIREMENT

Horizontal / Vertical Frequency

Horizontal Frequency	24 – 80 kHz
Vertical Refresh Rate	50 – 75 Hz.
Maximum Pixel Clock	135 MHz
Sync Polarity	Independent of sync polarity.

Timing Table

Mode	Resolution	fH (KHz)	fV (Hz)	Dot clock (MHz)	Sync polarity H	Sync polarity V	Horizontal (dot) A	B	C	D	E	Vertical (line) O	P	Q	R	S	備註
1	640×350 @70Hz VGA	31.469	70.087	25.175	P	N	800	96	48	640	16	449	2	60	350	37	
2	640×350 @85Hz VGA	37.861	85.080	31.500	P	N	832	64	96	640	32	445	3	60	350	32	Performance no guarantee
3	640×400 @60Hz VGA	31.469	59.940	25.175	N	P	800	96	48	640	16	525	2	73	400	50	Performance no guarantee
4	640×400 @70Hz VGA	31.469	70.087	25.175	N	P	800	96	48	640	16	449	2	35	400	12	
5	640×400 @85Hz VGA	37.861	85.080	31.500	N	P	832	64	96	640	32	445	3	41	400	1	Performance no guarantee
6	640×480 @50Hz VGA	24.688	49.637	19.750	N	P	800	64	80	640	16	497	4	10	480	3	Performance no guarantee
7	640×480 @60Hz VGA	31.469	59.940	25.175	N	N	800	96	48	640	16	526	2	33	480	11	
8	640×480 @67Hz MAC	35.000	66.667	30.240	N	N	864	64	96	640	64	525	3	39	480	3	SOG can support
9	640×480 @72Hz VGA	37.861	72.809	31.500	N	N	832	40	128	640	24	520	3	28	480	9	
10	640×480 @75Hz VGA	37.500	75.000	31.500	N	N	840	64	120	640	16	500	3	16	480	1	
11	640×480 @85Hz VGA	43.269	85.008	36.000	N	N	832	56	80	640	56	509	3	25	480	1	Performance no guarantee
12	720×400 @70Hz VGA	31.469	70.087	28.322	N	P	900	108	45	720	27	449	2	35	400	12	
13	720×400 @85Hz VGA	37.927	85.039	35.500	N	P	936	72	108	720	36	446	3	42	400	1	Performance no guarantee

Mode	Resolution	fH (KHz)	fV (Hz)	Dot clock (MHz)	Sync polarity H	Sync polarity V	Horizontal (dot) A	B	C	D	E	Vertical (line) O	P	Q	R	S	備註
14	720x480@60Hz	31.469	59.940	27.000	N	N	858	62	76	720	0	525	6	39	480	0	Performance no guarantee
15	720x576 @50Hz	31.250	50.000	27.000	N	N	864	64	12	720	68	625	5	5	576	39	Performance no guarantee
16	800×600 @56Hz SVGA	35.156	56.250	36.000	P	P	1024	72	128	800	24	625	2	22	600	1	
17	800×600 @60Hz SVGA	37.879	60.317	40.000	P	P	1056	128	88	800	40	628	4	23	600	1	
18	800×600 @72Hz SVGA	48.077	72.188	50.000	P	P	1040	120	64	800	56	666	6	23	600	37	
19	800×600 @75Hz SVGA	46.875	75.000	49.500	P	P	1056	80	160	800	16	625	3	21	600	1	
20	800×600 @85Hz SVGA	53.674	85.061	56.250	P	P	1048	64	152	800	32	631	3	27	600	1	Performance no guarantee
21	832×624 @74.6Hz MAC	49.725	74.500	57.283	N	N	1152	64	224	832	32	667	3	39	624	1	SOG can support
22	1024×768 @50Hz XGA	39.643	49.980	52.000	N	P	1312	104	144	1024	40	793	4	18	768	3	Performance no guarantee
23	1024×768 @60Hz XGA	48.363	60.004	65.000	N	N	1344	136	160	1024	24	806	6	29	768	3	
24	1024×768 @70Hz XGA	56.476	70.069	75.000	N	N	1328	136	144	1024	24	806	6	29	768	3	
25	1024×768 @75Hz XGA	60.023	75.029	78.750	P	P	1312	96	176	1024	16	800	3	28	768	1	
26	1024×768 @75Hz MAC	60.150	74.720	80.000	N	N	1330	96	168	1024	42	805	3	31	768	3	
27	1024×768 @85Hz XGA	68.677	84.997	94.500	P	P	1376	96	208	1024	48	808	3	36	768	1	Performance no guarantee
28	1152×864 @75Hz SXGA	67.500	75.000	108.000	P	P	1600	128	256	1152	64	900	3	32	864	1	
29	1152×870 @75Hz MAC	68.681	75.062	100.000	N	N	1456	128	144	1152	32	915	3	39	870	3	SOG can support
30	1280×768@50Hz	39.593	49.929	65.250	N	P	1648	128	184	1280	56	793	7	15	768	3	Performance no guarantee
31	1280×768 @60Hz	47.396	59.995	68.250	P	N	1440	32	80	1280	48	790	7	12	768	3	
32	1280×768 @60Hz	47.776	59.870	79.500	N	P	1664	128	192	1280	64	798	7	20	768	3	
33	1280×768 @75Hz	60.289	74.893	102.250	N	P	1696	128	208	1280	80	805	7	27	768	3	
34	1280×768 @85Hz	68.633	84.837	117.500	N	P	1712	136	216	1280	80	809	7	31	768	3	Performance no guarantee
35	1280×960 @50Hz	49.405	49.853	83.000	N	P	1680	128	200	1280	72	991	4	3	960	3	Performance no guarantee
36	1280×960 @60Hz	60.000	60.000	108.000	P	P	1800	112	312	1280	96	1000	3	36	960	1	

Mode	Resolution	fH	fV	Dot clock	Sync polarity		Horizontal (dot)					Vertical (line)					備註
		(KHz)	(Hz)	(MHz)	H	V	A	B	C	D	E	O	P	Q	R	S	
37	1280×960 @75Hz	74.592	74.443	128.895	P	P	1728	136	224	1280	88	1002	3	36	960	3	
38	1280×1024 @50Hz SXGA	52.679	49.838	80.500	N	P	1680	128	200	1280	72	1057	7	23	1024	3	Performance no guarantee
39	1280×1024 @60Hz SXGA	63.981	60.020	108.000	P	P	1688	112	248	1280	48	1066	3	38	1024	1	
41	1280×1024 @72Hz SXGA	76.020	71.448	130.223	P	P	1712	133	248	1280	51	1064	2	38	1024	0	
42	1280×1024 @75Hz SXGA	79.976	75.025	135.000	P	P	1688	144	248	1280	16	1066	3	38	1024	1	
43	1360×768 @60Hz WXGA	47.712	60.015	85.500	P	P	1792	112	256	1360	64	795	6	18	768	3	
44	1400×1050 @50Hz WXGA+	54.113	49.965	100.000	N	P	1848	144	224	1400	80	1083	4	26	1050	3	Performance no guarantee
45	1400×1050 @60Hz WXGA+	64.744	59.948	101.000	P	N	1560	32	80	1400	48	1080	4	23	1050	3	
46	1400×1050 @60Hz WXGA+	65.317	59.978	121.750	N	P	1864	144	232	1400	88	1089	4	32	1050	3	
47	1400×1050 @75Hz WXGA+	82.278	74.867	156.000	N	P	1896	144	248	1400	104	1099	4	42	1050	3	
48	1440×900 @60Hz WXGA+	55.469	59.901	88.750	P	N	1600	32	80	1440	48	926	6	17	900	3	
49	1440×900 @60Hz WXGA+	55.935	59.887	106.500	N	P	1904	152	232	1440	80	934	6	25	900	3	
50	1440×900 @75Hz WXGA+	70.635	74.984	136.750	N	P	1936	152	248	1440	96	942	6	33	900	3	

*1. Tolerance ≧ ± 2kHz.

*2. Any timing not in the list, it should display as normal or show on “OUT OF RANGE” OSD message without blanking.

*3. The image quality of 85Hz mode might be worse than 75Hz. (Display quality is not guaranteed because the LCD panel supports upto 75Hz)

Primary Presets

1440x900 @ 60Hz

User Presets

Number of User Presets (recognized timings) Available: 10 presets total in FIFO configuration

Changing Modes

- Maximum Mode Change Blank Time for image stability : 3 seconds (Max), excluding “Auto Image Adjust” time
- Under DOS mode (640 x 350, 720 x 400 & 640 x 400), it should recall factory setting when execute “Auto Image Adjust”
- The monitor needs to do “Auto Adjust” the first time when a new mode is detected(See section “0-Touch™ Function Actions”)

3. Front Panel Function Control Description

3.1 Short Cuts Function from the button(s)

[1]	Main Menu
[2]	Input toggle (Analog or Digital)
[▼] or [▲]	To immediately activate Brightness /Contrast menu.
Hot Keys for Function Controls	
[▼]+ [▲]	Recall Contrast or Brightness while in the Contrast or Brightness adjustment, or recall both of Contrast and Brightness when the OSD is not on.
[1] + [2]	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode
[1] + [▼] + [▲] (hold for 3 sec)	White Balance. White Balance should set the screen on the pure black and white pattern with 640*480@60Hz resolution.
[1] + [▼] (hold for 10 sec)	Power Lock (Unlock). User won't be able to turn off the monitor.
[1] + [▲] (hold for 10 sec)	OSD Lock (Unlock). It will lock all functions.
[2] + [⏻] **with signal** (hold for 3 sec)	Factory Mode (Press [⏻] exit factory mode.) Inter Factory Mode adjust white balance and setting Burn in Mode (On or Off) .
Remark : All the short cuts function are only available while OSD off	

3.2 Front Panel Hardware Controls

Power Switch (Front Head)	Power Control, soft Power Switch.
Power LED (Front Head)	Blue – ON Orange – Active Off Dark = Soft Power Switch OFF
Front Panel Controls (Head) [1] [2] [⏻] [▼] [▲]	[1] Button 1 [2] Button 2 [⏻] Power [▼] Down Arrow Button [▲] Up Arrow Button Note: Power Button, Button 1 and Button 2 must be one-shot logic operation. (i.e. there should be no cycling)
Reaction Time	OSD must fully appear within 0.5s after pushing Button 1

3.3 OSD Menu Controls

Select the menu items shown below by using the up [▲] and down [▼] buttons.

- **Main Menu :**



- **Auto Image Adjust :**

To automatically adjust H./ V. Position, Phase adjust and Clock adjust.

REMARK: There may need to select "**Fine Tune**" function on "**Manual Image Adjust**" to optimized Performance for various VGA tolerance.

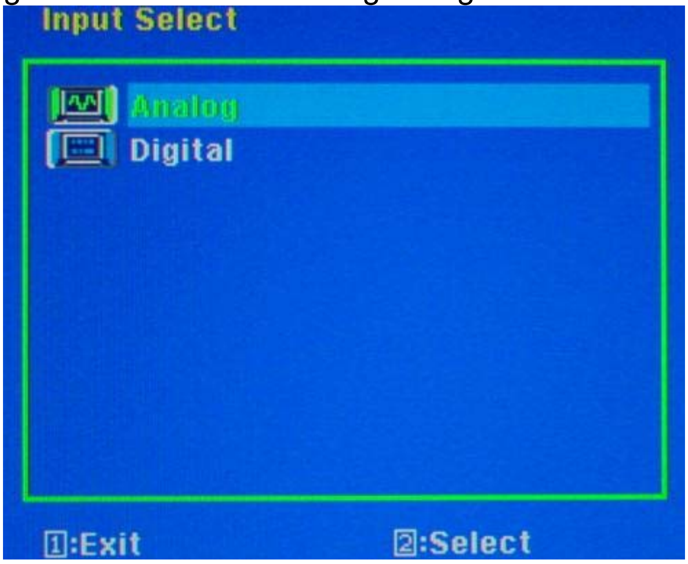


- **Contrast / Brightness :**

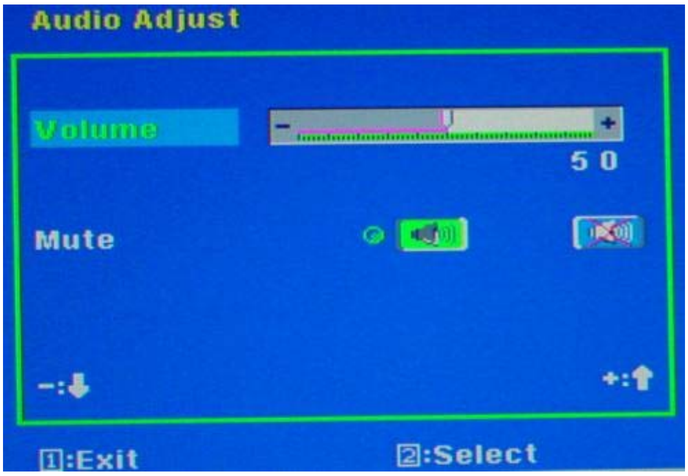
To adjust the Contrast of the video and the backlight currency.



- **Input Select :**
  To select the signal sources of the Analog or Digital.



- **Audio Adjust :**
  To adjust the audio volume and mute.



- **Color Adjust :**

  To select the color temperature sRGB, 9300°K, 7500°K ,6500°K, 5400°K or user color.



- **Information:**

To display the data about Horizontal / Vertical frequency, Pixel clock, Resolution , Model number and Serial No. of the monitor.



- **Image Adjust:**

Horizontal Size: To adjust the horizontal pixel clock of the video.

H./V. Position: To adjust the horizontal and vertical position of the video.

Fine Tune: To adjust the delay time of data and clock.

Sharpness: To select the picture sharpness of display.



- **Setup Menu::**

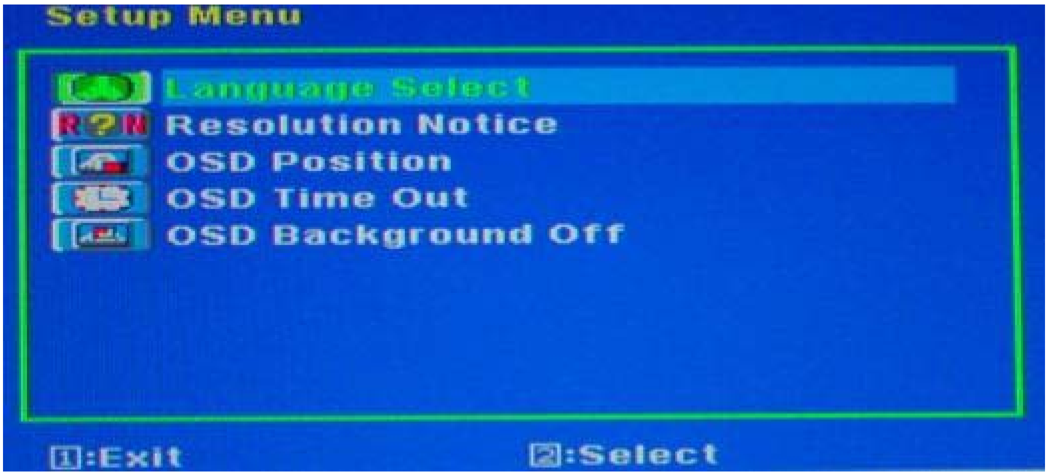
Language Select: To select one of eight languages.(English, French, German, Italian, Spanish, Finnish, Japanese, Traditional Chinese, and Simplified Chinese)

Resolution Notice: Enable (on) : OSD will notify the best picture quality resolution change the resolution to 1440 x 900

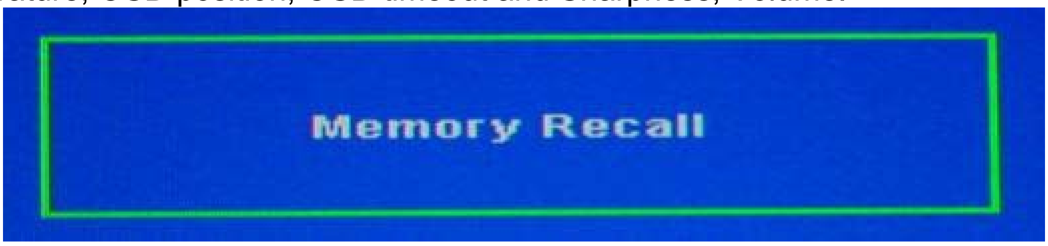
OSD Position: To set OSD position.

OSD Timeout: To set the displaying time of OSD.

OSD Background : To select video background brightness.



- **Memory Recall:**
Restore default settings of Clock, H./V. Position, Phase, Contrast, Brightness, Color temperature, OSD position, OSD timeout and Sharpness, Volume.



4. Circuit Description

1. Power supply (DC/DC Converter)

This brick convert is the 110-220AC input voltage to 12V AND 5V output for inverter, audio, panel and system controller use.

It consists of a PWM IC (CM0565R, U101)

2. Scaling controller

The ADC is to convert RGB analog signal to digital signal that scaling chip can acknowledge.

The HSYNC input receives a logic signal and provides the frequency reference for pixel clock generation.

The scaling IC is to converts the input signal ranging from VGA to WXGA into WXGA resolution that panel can acknowledge.

GENERAL DESCRIPTION

The TSUM17AK is a high performance, and fully integrated graphics processing IC solution for LCD monitors with resolutions up to WXGA. It is configured with an integrated triple-ADC/PLL, a high quality scaling engine, an on-screen display controller, a built-in output clock generator, and LVDS display interface. To further reduce system costs, the TSUM17AK also integrates intelligent power management .

5. Adjustment Procedure

1. Function Test

1.1 Product

- 19" LCD Monitor

1.2 Test Equipment

- Color Video Signal & Pattern (or PC with WXGA resolution and a sound card)

1.3 Test Condition

Before function test and alignment, each LCD Monitor should be run-in and warmed up for at least 30 minutes with the following conditions:

(a) In room temperature,
(b) With full-white screen, RGB, and Black
(c) With cycled display modes,
640*480 (H=43.27kHz, V=85Hz)
800*600 (H=53.7kHz, V=85Hz)
1024*768 (H=68.67kHz, V=85Hz)
1280*1024 (H=79.97kHz, V=75Hz)
1440*900 (H=70.63kHz, V=75Hz)

1.4 Test Display Modes & Pattern

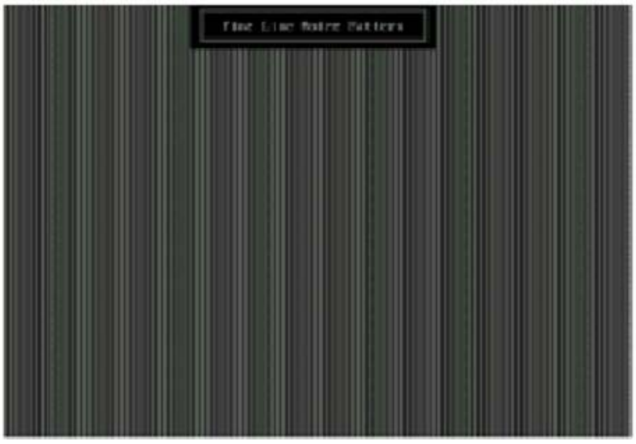
1.4.1 Compatible Modes

Digital	Analog
1. 640 x 480 @ 60Hz, 31.5kHz	1. 640 x 480 @ 60Hz, 31.5kHz
2. 640 x 480 @ 67Hz, 35.0kHz	2. 640 x 480 @ 67Hz, 35.0kHz
3. 640 x 480 @ 75Hz, 37.5kHz	3. 640 x 480 @ 75Hz, 37.5kHz
4. 640 x 480 @ 72Hz, 37.9kHz	4. 640 x 480 @ 72Hz, 37.9kHz
5. 640 x 480 @ 85Hz, 43.27kHz	5. 640 x 480 @ 85Hz, 43.27kHz
6. 720 x 400 @ 70Hz, 31.5kHz	6. 720 x 400 @ 70Hz, 31.5kHz
7. 800 x 600 @ 56Hz, 35.1kHz	7. 800 x 600 @ 56Hz, 35.1kHz
8. 800 x 600 @ 60Hz, 37.9kHz	8. 800 x 600 @ 60Hz, 37.9kHz
9. 800 x 600 @ 75Hz, 46.9kHz	9. 800 x 600 @ 75Hz, 46.9kHz
10. 800 x 600 @ 72Hz, 48.1kHz	10. 800 x 600 @ 72Hz, 48.1kHz
11. 800 x 600 @ 85Hz, 53.7kHz	11. 800 x 600 @ 85Hz, 53.7kHz
12. 832 x 624 @ 75Hz, 49.7kHz	12. 832 x 624 @ 75Hz, 49.7kHz
13. 1024 x 768 @ 60Hz, 48.4kHz	13. 1024 x 768 @ 60Hz, 48.4kHz
14. 1024 x 768 @ 70Hz, 56.5kHz	14. 1024 x 768 @ 70Hz, 56.5kHz
15. 1024 x 768 @ 72Hz, 58.1kHz	15. 1024 x 768 @ 72Hz, 58.1kHz
16. 1024 x 768 @ 75Hz, 60.0kHz	16. 1024 x 768 @ 75Hz, 60.0kHz
17. 1024 x 768 @ 85Hz, 68.67kHz	17. 1024 x 768 @ 85Hz, 68.67kHz
18. 1280 x 1024 @ 60Hz, 63.4kHz	18. 1280 x 1024 @ 60Hz, 63.4kHz
19. 1280 x 1024 @ 75Hz, 79.97kHz	19. 1280 x 1024 @ 75Hz, 79.97kHz
20. 1440 x 900 @ 75Hz, 70.63kHz	20. 1440 x 900 @ 75Hz, 70.63kHz

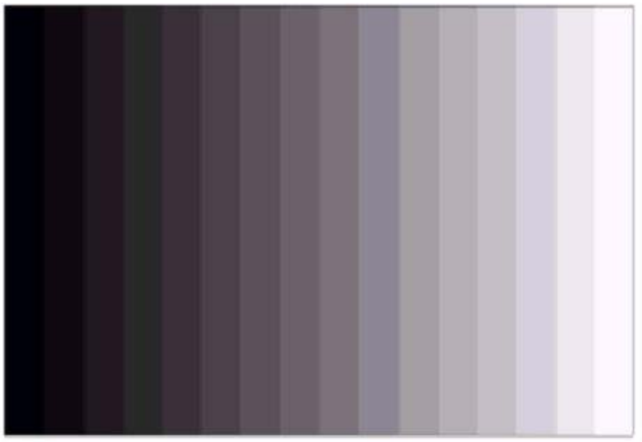
1.4.2 Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise.	Figure 1
2	Contrast/Brightness	16 Gray Scale	16 gray levels should be distinguishable.	Figure 2
3	Boundary	Horizontal & Vertical Thickness	Horizontal and Vertical position of video should be adjustable to be within the screen frame.	Figure 3
4	RGB Color Performance	RGB Color Intensities	Contrast of each R, G, B, color should be normal.	Figure 4, 5, 6

5	Screen Uniformity & Flicker	Full White	Should be compliant with the spec.	Figure 7
6	Dead Pixel/Line	White Screen & Dark Screen	The numbers of dead pixels should be compliant with the spec.	Figure 7, 8
7	White Balance	White & Black Pattern	The screen must have the pure white and black pattern, no other color.	Figure 9



Fine Line Morie Pattern (Figure1)



Gray Scale Pattern (Figure2)



Horizontal & Vertical Thickness Pattern (Figure 3)



R. Color Pattern (Figure 4)



G. Color Pattern (Figure5)



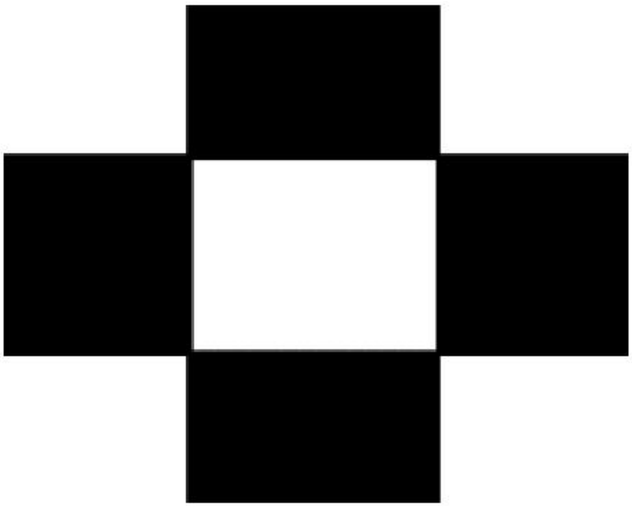
B. Color Pattern (Figure 6)



Full White Patter (Figure 7)



Dark Screen Pattern (Figure 8)



Black-White Pattern (Figure 9)

1.5 Function Test and Alignment Procedure

1.5.1 Memory Recall

You should do “**Memory Recall**” first. This action will allow you to erase all end-user’s settings and restore the factory defaults.

1.5.2 Auto Image Adjust

Please select and enter “**Auto Image Adjust**” function on Main Menu to see if it is workable.

The “**Auto Image Adjust**” function is aimed to offer a better screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

1.5.3 Firmware

Test Pattern: Burn In Mode (Refer to Chapter 3-1. Hot Keys for Function Controls)

- Make sure the F/W is the latest version.

1.5.4 DDC

Test Pattern: EDID program

- Make sure it can pass test program.

1.5.5 Fine Tune and Sharpness

Test Signal: 1440x900@60Hz
Test Pattern: Line Moire Pattern
- Check and see if the image has noise and focus performs well. Eliminate visual line bar.
- If not, readjust by the following steps:
(a) Select and enter "**Fine Tune**" function on "**Manual Image Adjust**" to adjust the image to eliminate visual wavy noise.
(b) Then, select and enter "**Sharpness**" function to adjust the clarity and focus of the screen image.

1.5.6 Boundary

Test Signal: 1440x900@60Hz
Test Pattern: Horizontal & Vertical Line Thickness Pattern
- Check and see if the image boundary is within the screen frame.
- If not, readjust by the following steps:
(a) Select and enter "**Manual Image Adjust**" function on OSD Main Menu.
(b) Then, select and enter "**Horizontal Size**" or "**Horizontal/Vertical Position**" function to adjust the video boundary to be full scanned and within screen frame.

1.5.7 White Balance

Test Signal: 1440x900@60Hz
Test Pattern: White and Black Pattern

1.5.8 R, G, B, Colors Contrast

Test Signal: 1440x900@60Hz
Test Pattern: R, G, B, Color Intensities Pattern and 16 Gray Scale Pattern
- Check and see if each color is normal and distinguishable.
- If not, please return the unit to repair area.

1.5.9 Screen Uniformity and Flicker

Test Signal: 1440x900@60Hz
Test Pattern: Full White Pattern
- Check and see if it is in normal condition.

1.5.10 Dead Pixel and Line

Test Signal: 1440x900@60Hz
Test Pattern: Dark and White Screen Pattern
- Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.
- The total numbers and distance of dead pixels should be compliant with the spec.

1.5.11 Mura

Test Pattern: White, RGB, Black, & Grey
Test Tool: 8% ND Filter
- Check if the Mura can pass 8% ND Filter.

1.5.12 Audio

Test Signal: Voice signal (optional, depend on model)
Test Pattern: liberty
- Make sure there is audio output.
- Make sure that audio function (volume≦80%) is working without noise and resonance.
- Make sure that the sound of right and left speakers are in balance.

1.5.13 Check for Secondary Display Modes
Test Signal:
Analog / Digital:

640*350@70Hz	640*480@60HZ / 75HZ	720*400@70Hz
800*600@60HZ / 75HZ	832*624@75Hz	1024*768@60HZ / 75HZ
1280*1024@60 / 75Hz		

- Normally when the primary mode 1440x900@60Hz is well adjusted and compliant with the specification, the secondary display modes will be great possible to be compliant with the spec. But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.

1.5.14 Memory Recall
After final QC step, we have to erase all saved changes again and restore the factory defaults. You should do "**Memory Recall**" again.

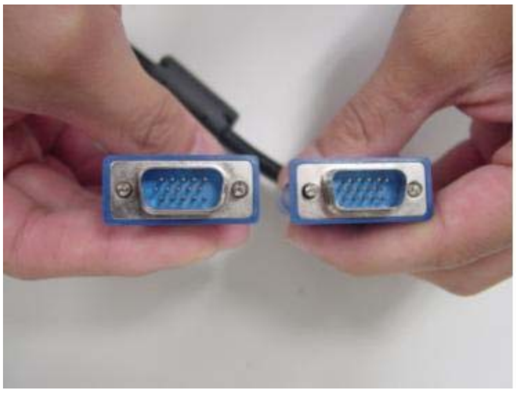
1.5.15 Power Off Monitor
Turn off the monitor by pressing "Power" button.

2. Firmware Upgrade Procedure
When you receive the returned monitor, please check whether the firmware version is the latest.

If not, please do the following procedures to upgrade it to the latest version.

2.1 Equipment Needed
- VX1935WM Monitor
- Fixture for Firmware Upgrade
- VGA Cable
- PC (Personal Computer)
- ISP Tool
- Firmware Upgrade Program
- One additional monitor for checking the program execution

- **ISP tool instruction**



15 pin D-Sub



LPT cable



ISP tool

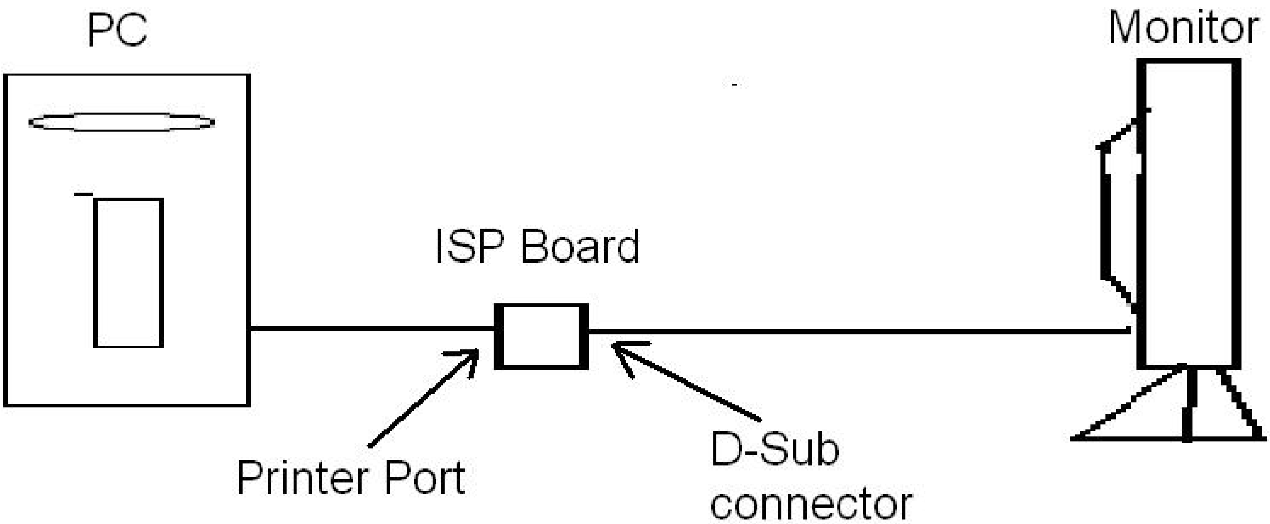


Use 12V adapter



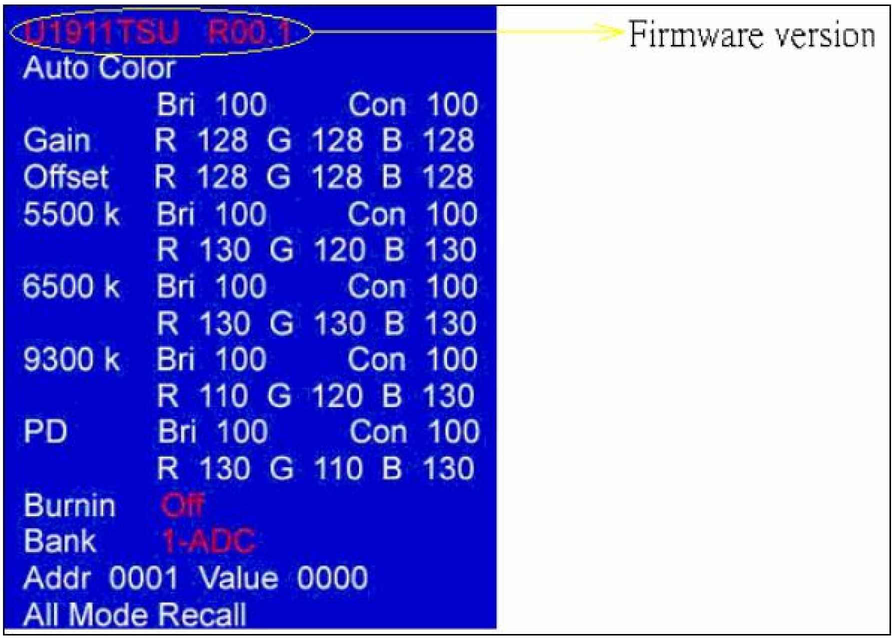
ISP connect method

- **ISP Download program procedure**
- **Hardware Connect status:**



➢ Version update

1. Check : Monitor model
2. Check : Firmware version



Factory Mode :

a. Hold on [2] + [⏻] **with signal** (hold for 3 seconds) into the factory mode.
b. Press [⏻] key exit factory mode.

3. Update final firmware version

Example : (VX1935WM follow the same setting procedure)
1. Check : Monitor model : HC154
2. Check : Firmware version : HC154_AL_150MX17A01R30.2 (ps)
3. Update final firmware version : HC154_AL_150MX17A01R30.3

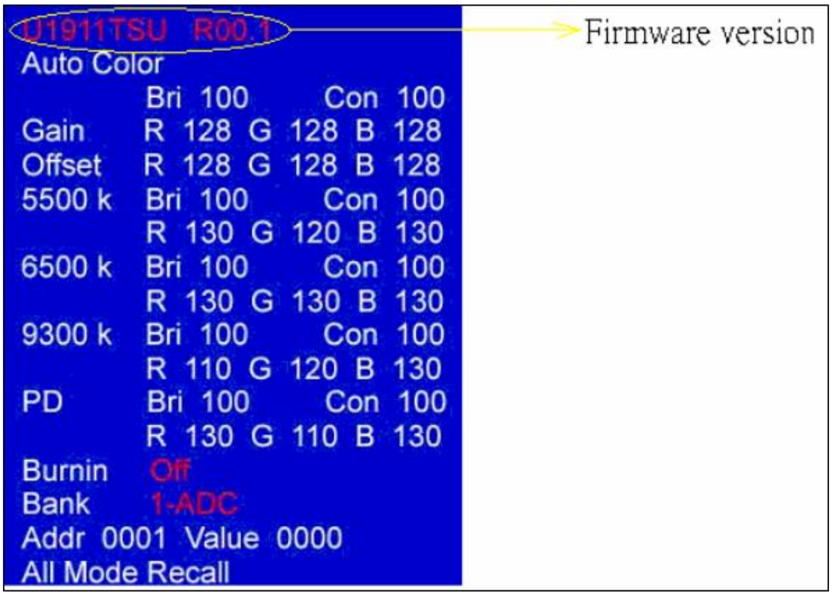
(ps) HC154_**AL**_150MX17A01R30.2

AL : Analog / LVDS
DL : Analog + Digital / LVDS
AR : Analog /RSDS
DR : Analog + Digital / RSDS

Panel type : **150MX17A01**
Firmware version : **R30.2**

➢ Change Panel (Version update)

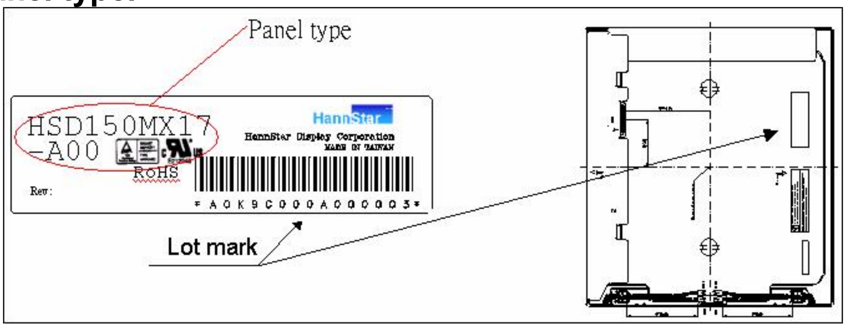
1. Check : Monitor model
2. Check : Firmware version



Factory Mode :

a. Hold on [2] + [⏻] **with signal** (hold for 3 seconds) into the factory mode.
b. Press [⏻] key exit factory mode.

3. Check : Panel type.



4. Change Panel.
5. Update final firmware version.
6. Update EDID code.

Example : (VX1935WM follow the same setting procedure)

1. Check : Monitor model : HC154
2. Check : Firmware version : HC154_AL_150MX17A00R30.2 (ps.1)
3. Check : Panel type : HSD150MX17A00.
4. Change Panel. (ps.2)

(ps.1) HC154_**AL**_150MX17A00R30.2

AL : Analog / LVDS
DL : Analog + Digital / LVDS
AR : Analog /RSDS
DR : Analog + Digital / RSDS

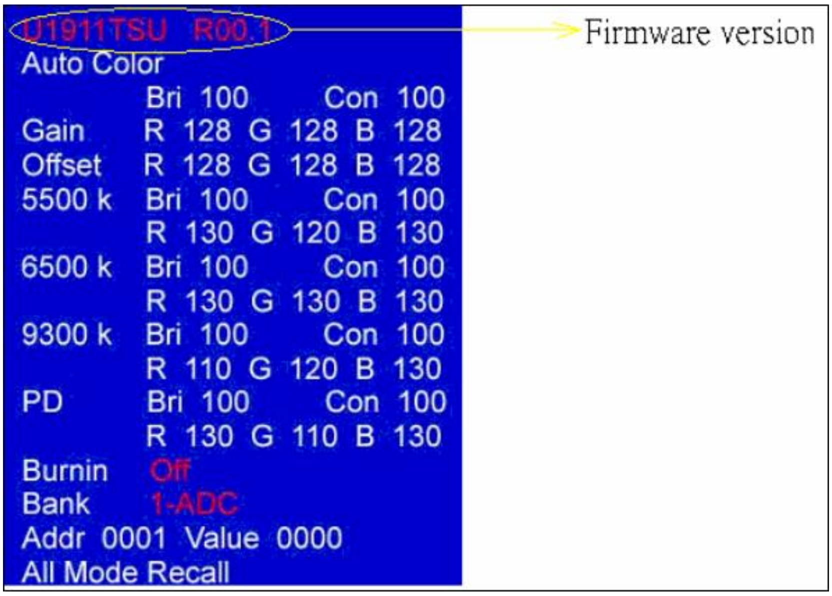
Panel type : **150MX17A01**
Firmware version : **R30.2**

(ps.2) If change panel : (Form HSD150MX17A00 change to **HSD150MX17A0**1)
Panel type : 150MX17A00 => **150MX17A01**
Firmware change : HC154_AL_150MX17A00R30.2 =>
HC154_AL_150MX17A01R30.2

5. Update final firmware version : **HC154_AL_150MX17A01R30.3**
6. Update EDID code : **HC154_150MX17A01_EDID_A.txt**

➢ Change Scaler Board (Version update)

1. Check : Monitor model
2. Check : Firmware version



Factory Mode :

a. Hold on [2] + [⏻] **with signal** (hold for 3 seconds) into the factory mode.
b. Press [⏻] key exit factory mode.

3. Change scaler board.
4. Update final firmware version.
5. Update EDID code.

Example : (VX1935WM follow the same setting procedure)

1. Check : Monitor model : **HC154**
2. Check : Firmware version : **HC154_AL_150MX17A01R30.2** (ps)

(ps) HC154_AL_150MX17A01R30.2

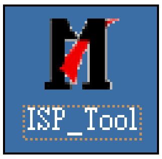
AL : Analog / LVDS
DL : Analog + Digital / LVDS
AR : Analog /RSDS
DR : Analog + Digital / RSDS

Panel type : **150MX17A01**
Firmware version : **R30.2**

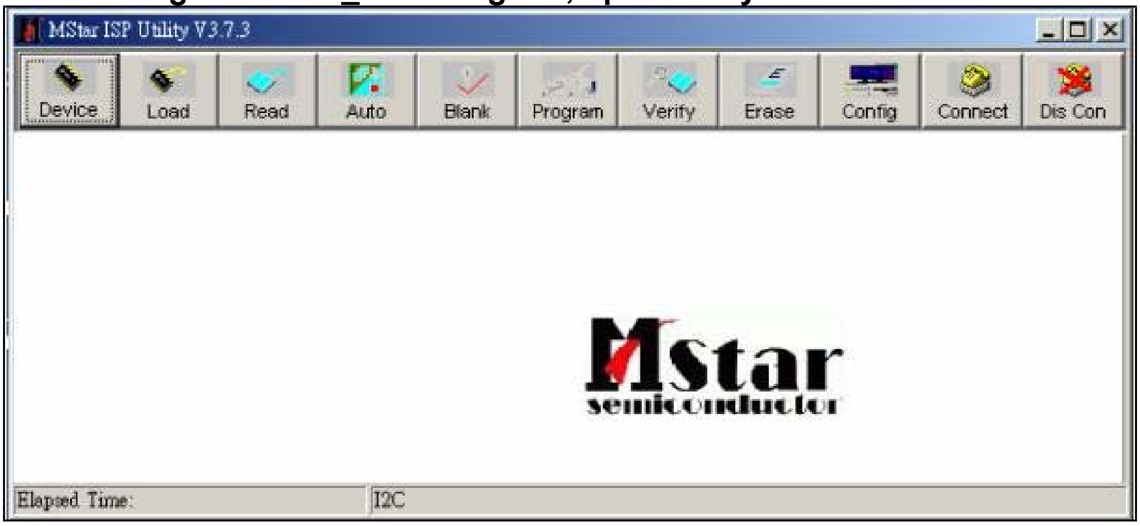
3. Change scaler board.
4. Update final firmware version : **HC154_AL_150MX17A01R30.3**
5. Update EDID code : **HC154_150MX17A01_EDID_A.txt**

➢ Mstar scaler ISP function

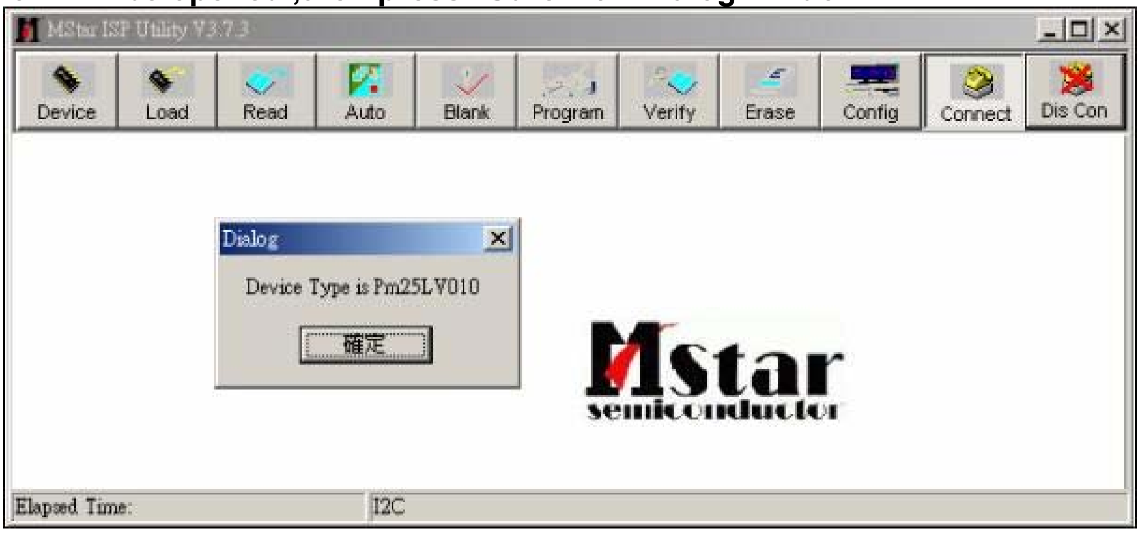
1. Enforce Mstar ISP_Tool program.



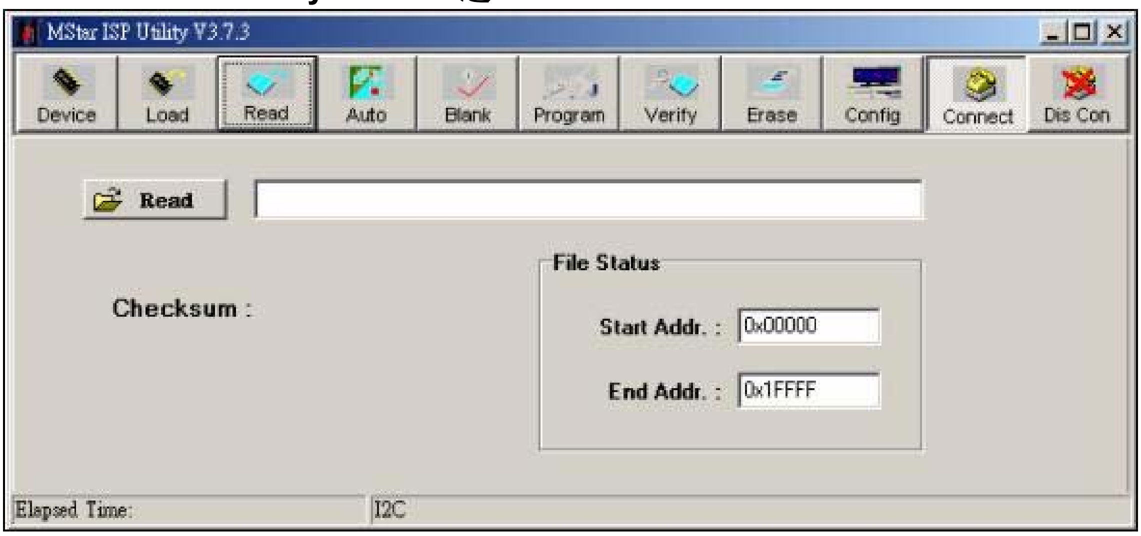
2. After Enforcing Mstar ISP_Tool Program, open Utility Window.



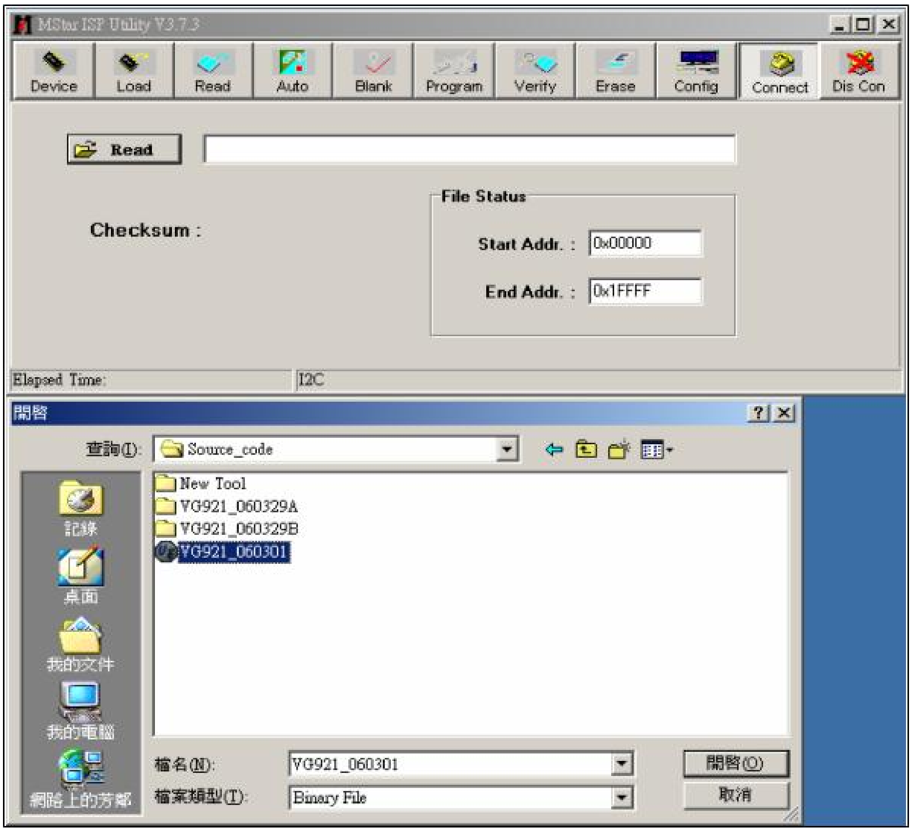
3. Enforce Mstar ISP Utility Window's Connect function, and Device Type's Dialog window will be opened ,then press "Sure " on Dialog window.



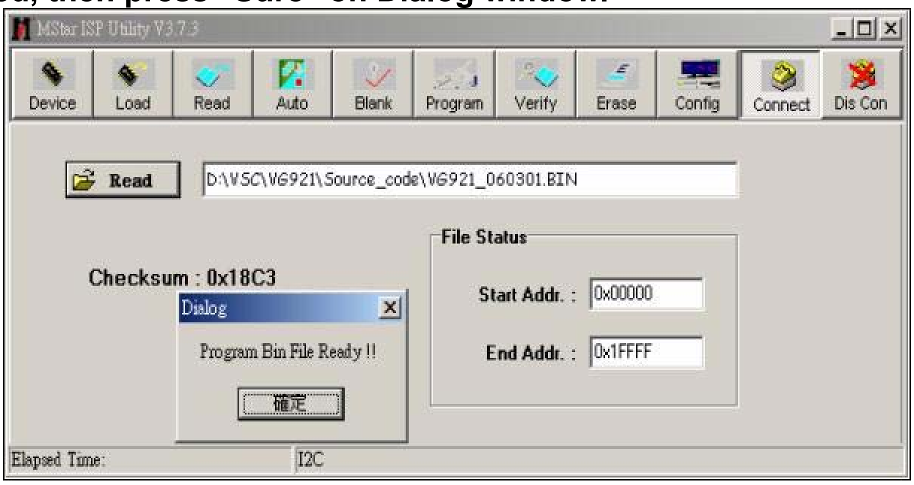
4. Enforce Mstar ISP Utility window 之 Read function.



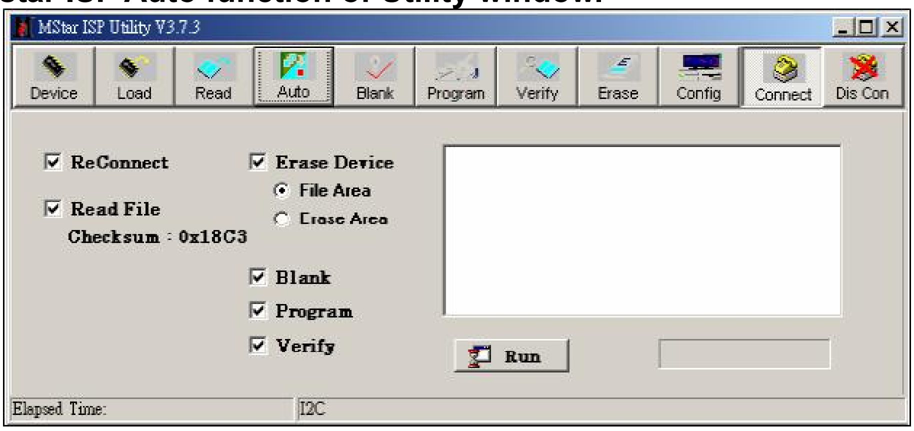
5. Enforce Mstar ISP Utility window's "Read" , and choose the path and the file of Binary code.



6. Choose the path and file of Binary code ,and Program Bin Ready Dialog window will be opened, then press "Sure" on Dialog window.



7. Enforce Mstar ISP Auto function of Utility window.



8. Enforce Mstar ISP Utility window "Run"and write in the data .



9. After writing in the data , Enforce Dis Connect function of Mstar ISP Utility window and the burn in procedure will be completed.



➢ DDC Key In Procedure

Note:

1. Every time after replacing the main board, you have to do the DDC key in.
2. If you find the DDC does not conform to the monitor, you have to do the DDC key in.

Equipment Needed

- VX1935 Series Monitor
- DDC Card
- PC
- RS232 cable
- VGA Cable or DVI Cable



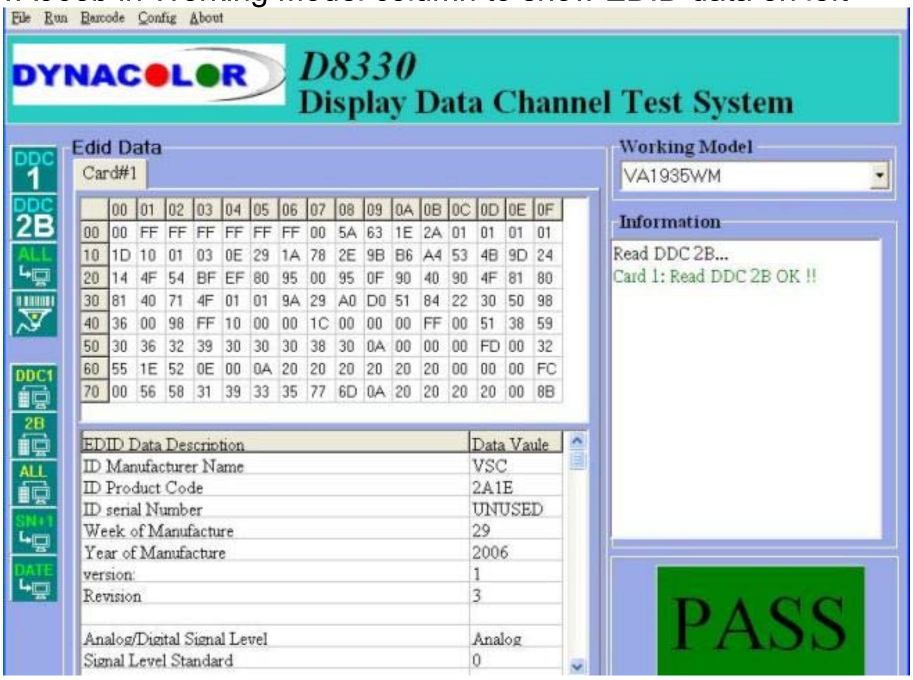
DDC Card (D8330)



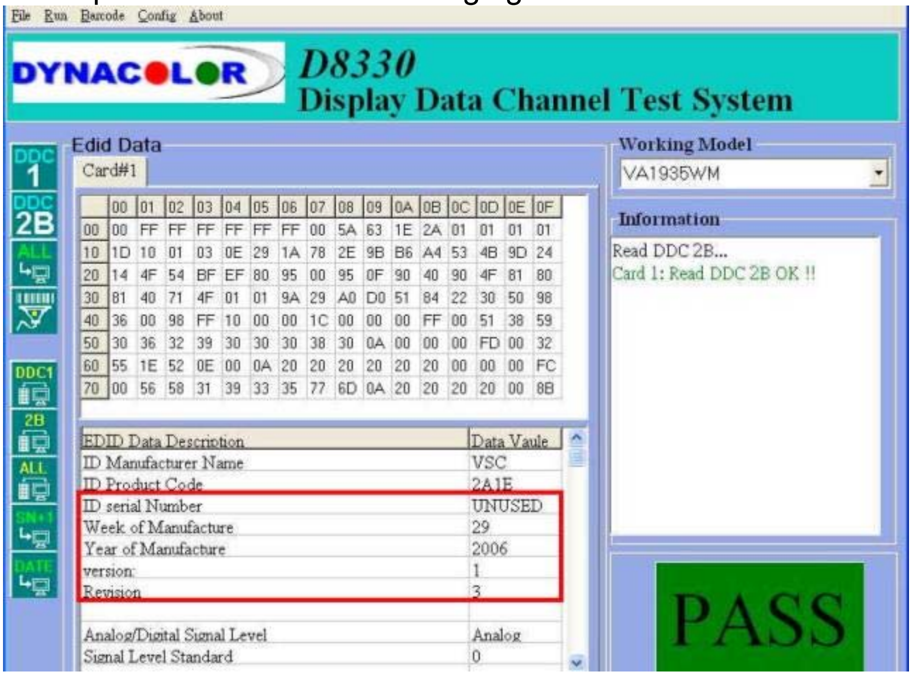


RS-232 Cable **VGA Cable**

Step 1 : Select VA903b in Working Model column to show EDID data on left



Step 2 : Modify the column of Week of Manufacture and Year of Manufacture and ID serial Number then press “2B” button for changing serial number data.



Step 3 : You will see the result as follows.



➢ Packing For Shipping And Disassembly Procedure

Packing For Shipping

1. Packing Procedure

1.1 Put the monitor in the PE bag and seal the bag with tape. (Figure 1 ~ 2)



(Figure 1)



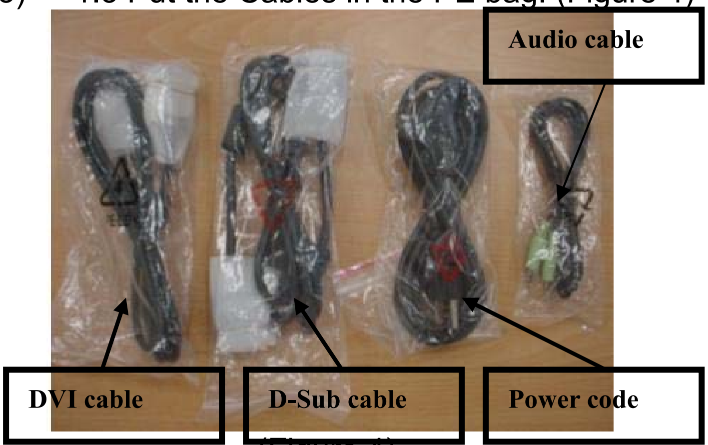
(Figure 2)

1.2 Put the cushions on the monitor. (Figure 3)



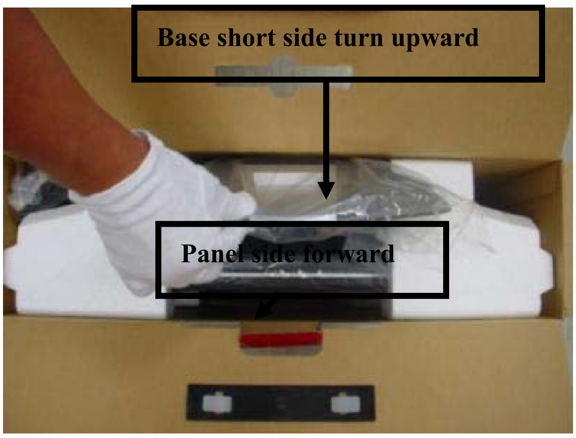
(Figure 3)

1.3 Put the Cables in the PE bag. (Figure 4)

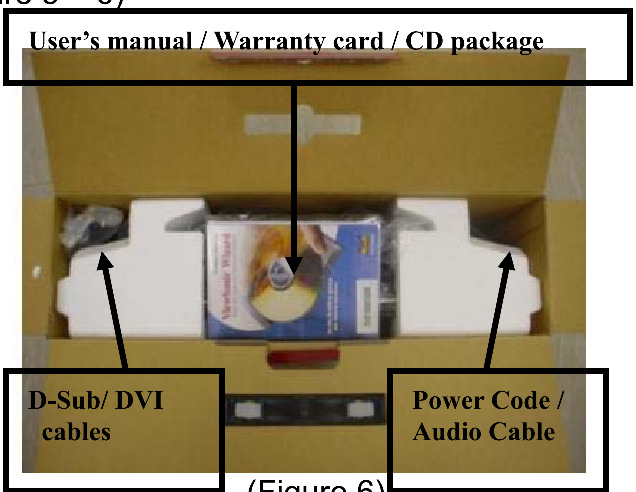


(Figure 4)

1.4 Place the monitor into the carton and then put all the accessories into the carton. At last, close the carton and seal it with tape. (Figure 5 ~ 6)



(Figure 5)



(Figure 6)

Disassembly Procedure

1. Disassembly of Stand unit from Monitor

1.1 Detach Base Unit from the monitor.



1.2 Remove the ARM cover.



1.3 Unfasten six screws to remove the ARM.

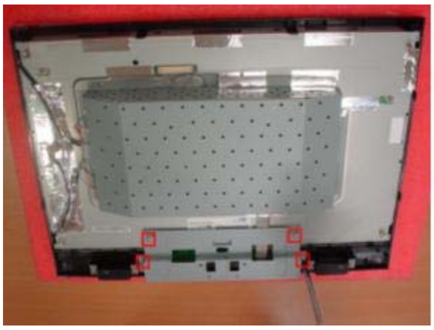


2. Disassembly of Front Cover and Rear Cover

2.1 Unscrew ten screws to remove Rear Cover.

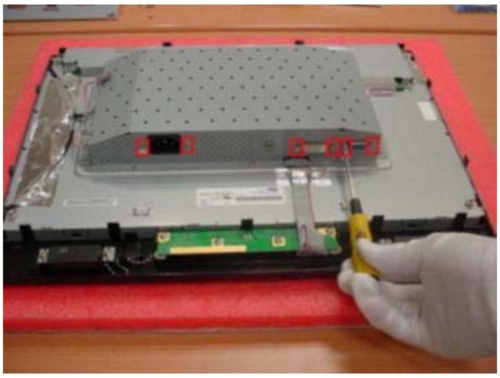


2.2 Unfasten four screws to remove Hinge folder bracket.

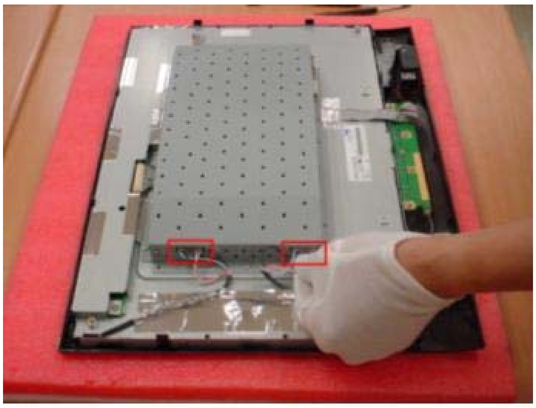
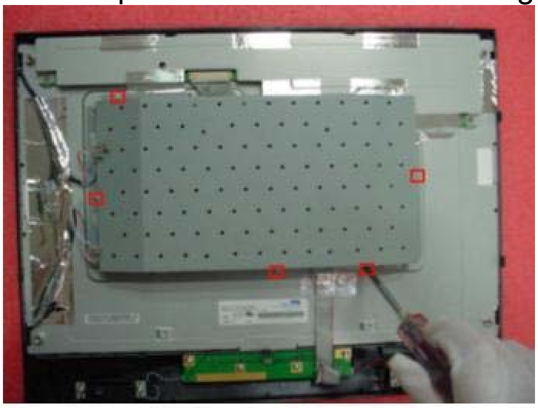


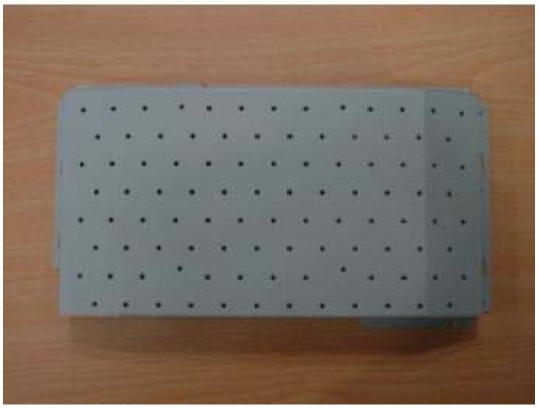


2.3 Unfasten six screws to remove the D-sub / DVI connector and Power socket.

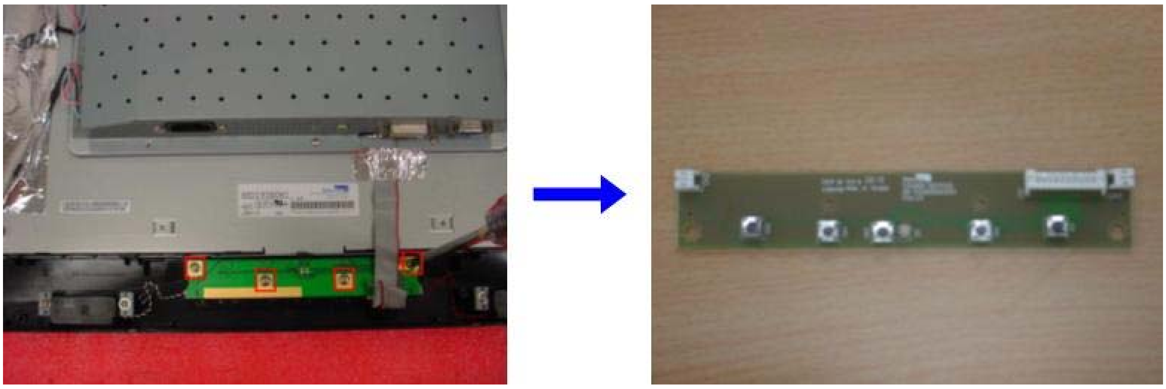


2.4 Unfasten five screws and disconnect Inverter cables from panel to remove the shielding.

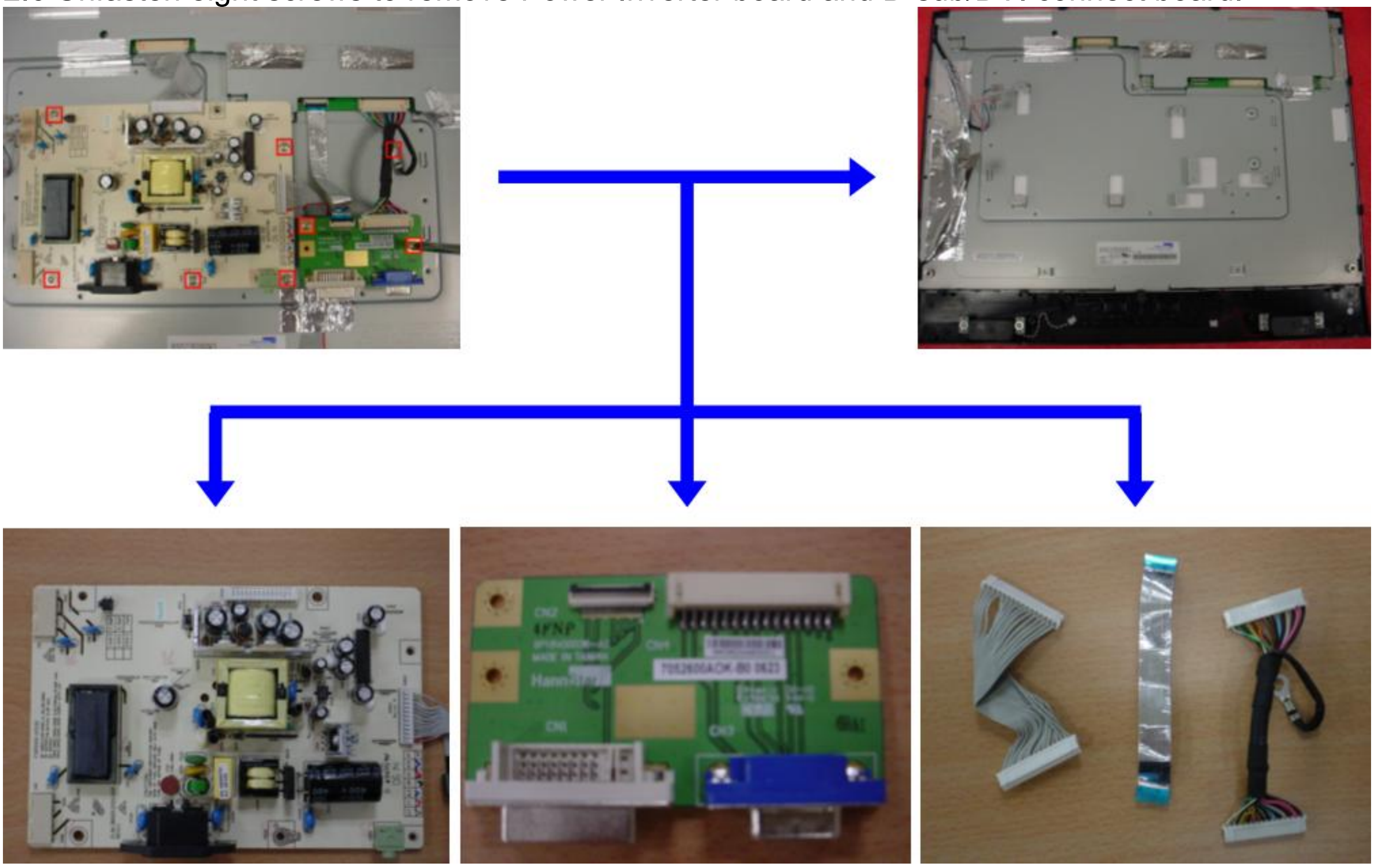





2.5 Unfasten four screws to remove the Keypad board.



2.6 Unfasten eight screws to remove Power Inverter board and D-sub/DVI connect board.



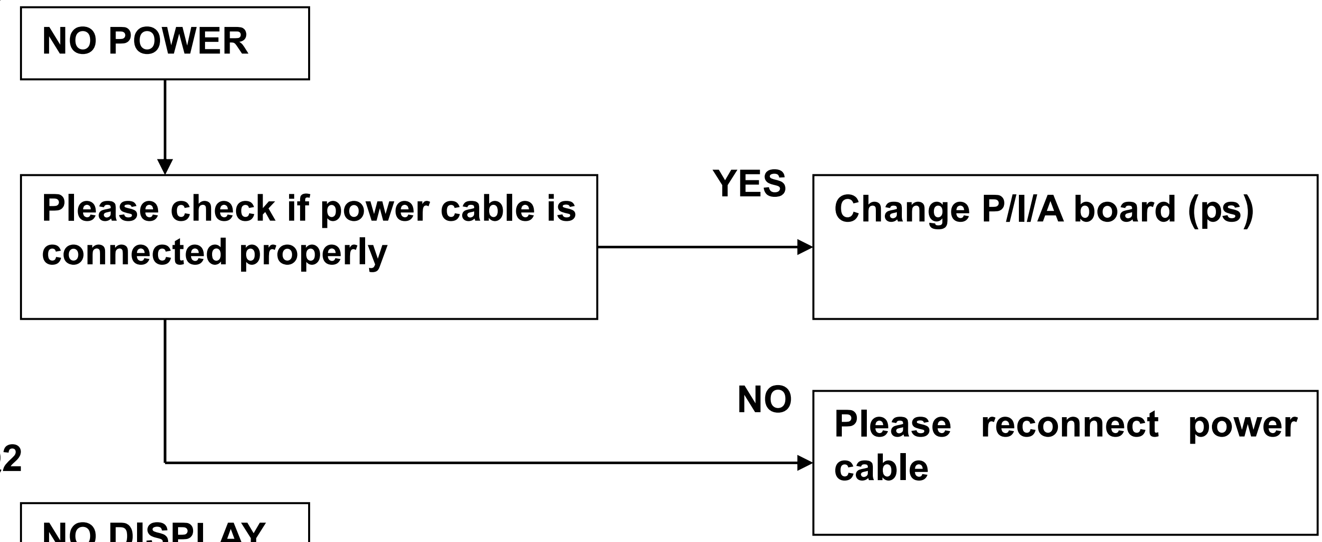
Power Inverter Board D-sub/DVI connect board Cables

2.7 Remove the Front Bezel.

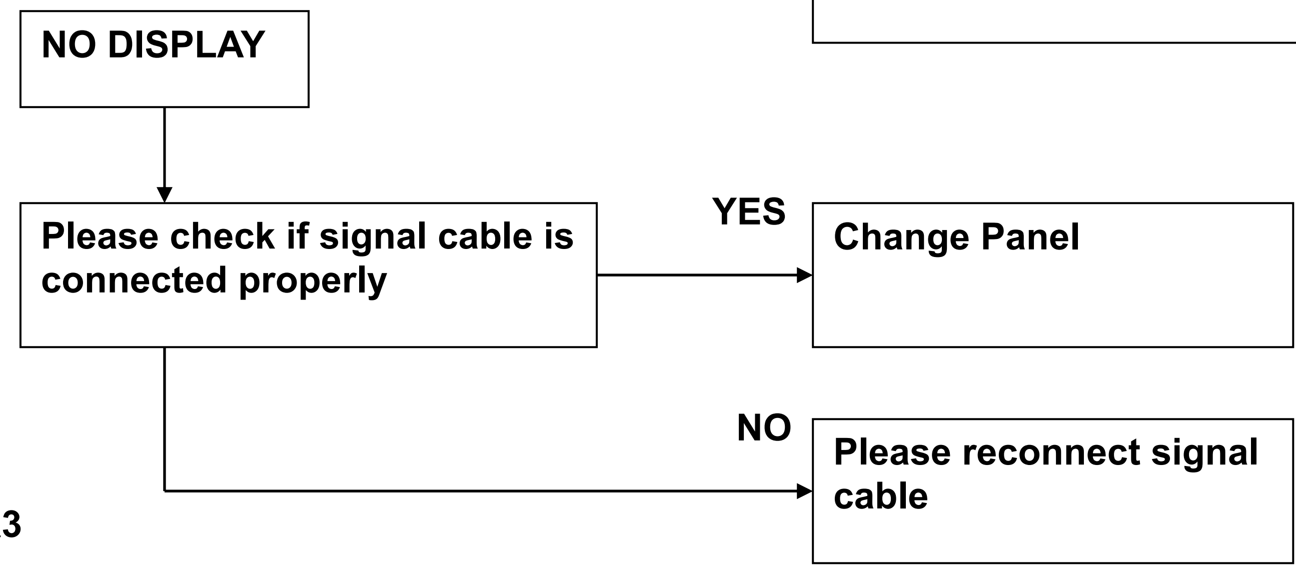


6. Troubleshooting Flow Chart

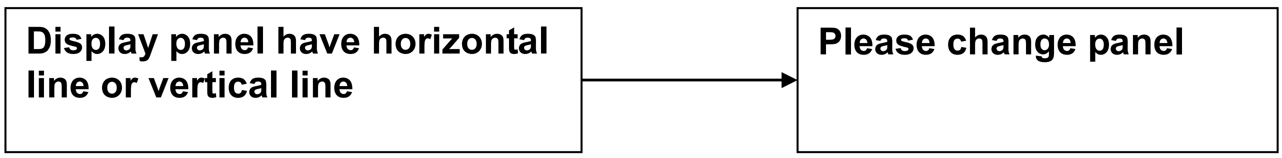
Q1



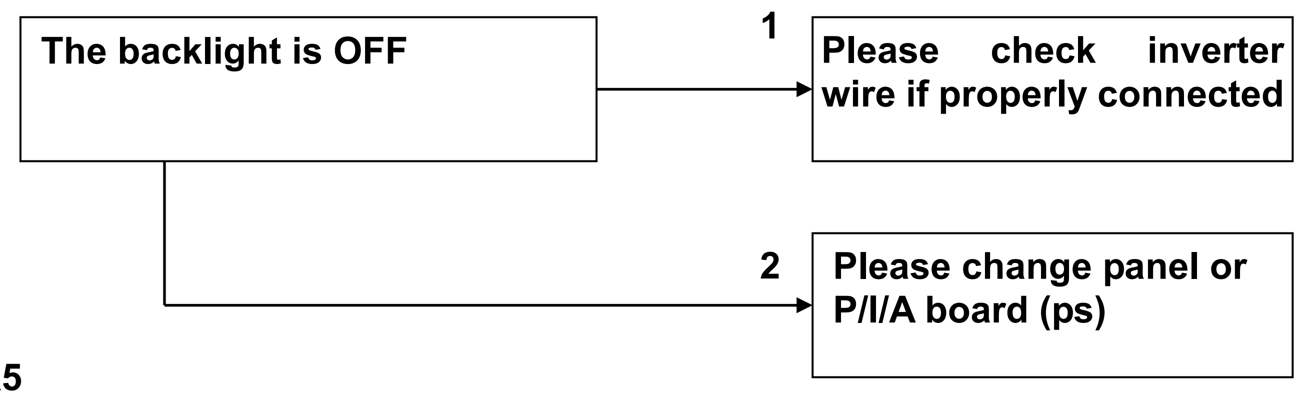
Q2



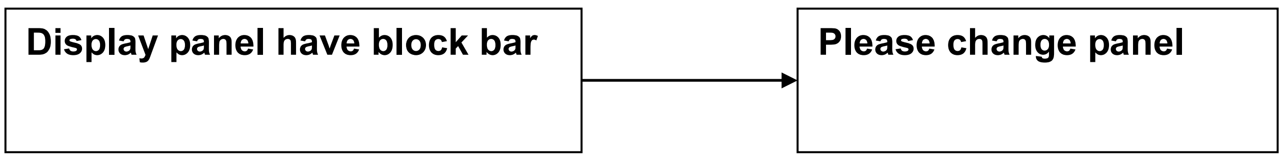
Q3



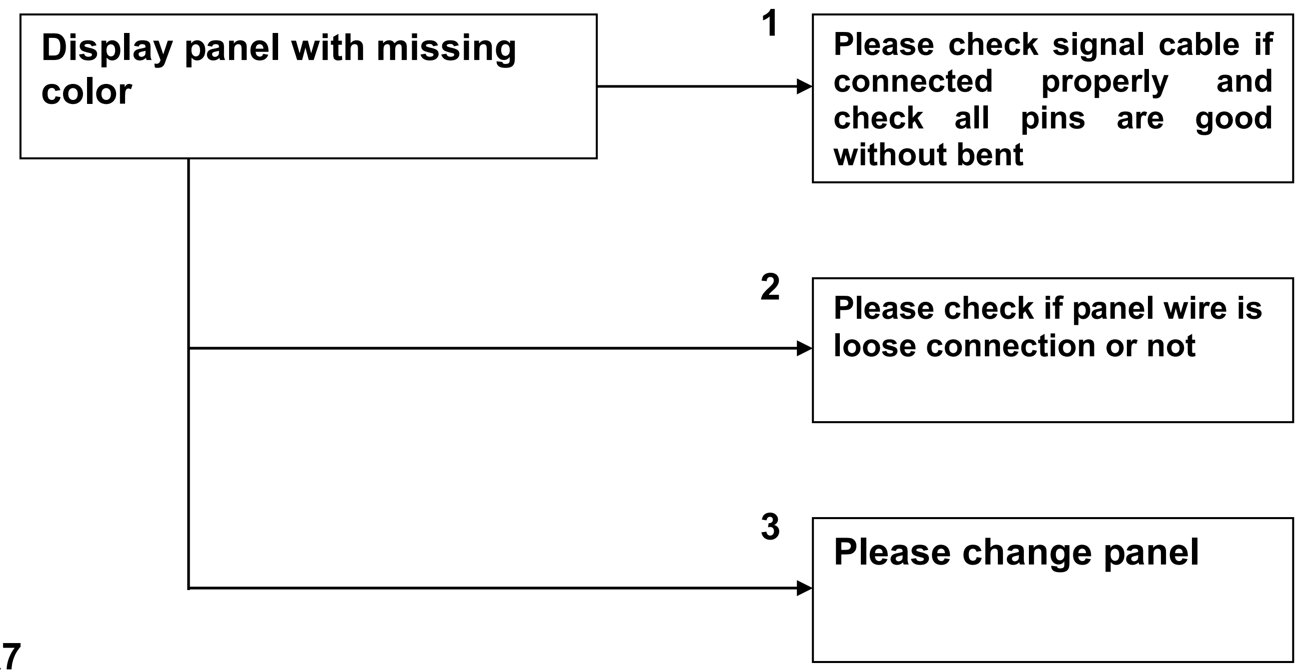
Q4



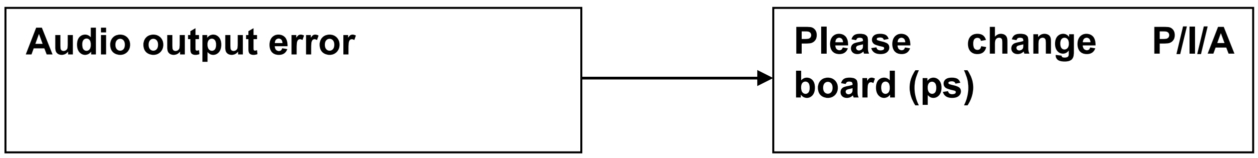
Q5



Q6



Q7



(ps) : P/I/A board ➔ Power/Inverter/Audio board

RECOMMENDED SPARE PARTS LIST (VX1935wm-1)

ViewSonic Model Number: VS11307

Serial No. Prefix: Q8Y **Rev: 1a**

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#
1	**Accessories:**	Power Cord - 250V/10A 1.8M 3C BLK (China)		A-00008038	33-E3980005G000		
2		Power Cord - 125V/10A 1.8M 3C BLK (USA)		A-00008039	33-E3980000G000		
3		Power Cord - 250V/10A 1.8M 3C BLK (Europe)		A-00008040	33-E3980003G000		
4		SoftWare Packing assy (china)		A-00008042	72-01193502G000		
5	**PC Board Assembly:**	Key Board (Lead Free)		B-00008074	70-VX193500G000		
6	**Cabinets:**	Front Panel (B + Button)		C-00008105	45-VX190117G350		
7		Back Cover		C-00008106	45-VX190213G350		
8		Front Cover (Silver)		C-00008107	40-05010019G000		
9		Back Cover (Arm - Silver)		C-00008108	40-05010020G000		
10		Cover (Silver)		C-00008109	40-11010001G000		
11	**Cables:**	Video Cable D/15P-15P(M)		CB-00008001	33-00090501G000		
12		Audio Cable (SZE33261B)		CB-00008003	33-00070500G000		
13	**Documentation:**	Energy Star Label		DC-00008001	62-07000009G000		
14		Hi-Pot Pass Label		DC-00008003	62-07000011G000		
15		Label (5ms sticker)		DC-00008098	62-07000012G000		
16		Label (Mylar 425*275*0.1)		DC-00008099	42-01260011G000		
17	**Electronic Components:**	Speaker 1.5W/8R RIGHT		E-00008004	30-V9031R50G000		
18		Speaker 1.5W/8R LEFT		E-00008005	30-V9031R51G000		
19		LCD Module (HSD190SGW1-A)		E-00008073	190SGW1-A00		
20	**Miscellaneous:**	Bird Logo Brand For Viewsonic		M-00008001	42-04260007G000		
21	**Packing Material:**	PE BAG 225*400MM		P-00008004	61-03000003G000		
22		PE BAG 500*650mm		P-00008005	61-03000007G000		
23		Craft Box (TWN)		P-00008085	60-01000032G000		
24		Craft Foam - Left		P-00008086	61-01000029G000		
25		Generic Foam Set		P-00001347	30833		
26		Generic Box		P-00002515	20653		
27		Craft Foam - Right		P-00008088	61-01000034G000		
28	**Plastics:**	Name plate Brand for Viewsonic		PL-00008002	42-04170008G000		
29		Pedestal Base (Black-C)		PL-00008024	40-06010019G000		

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

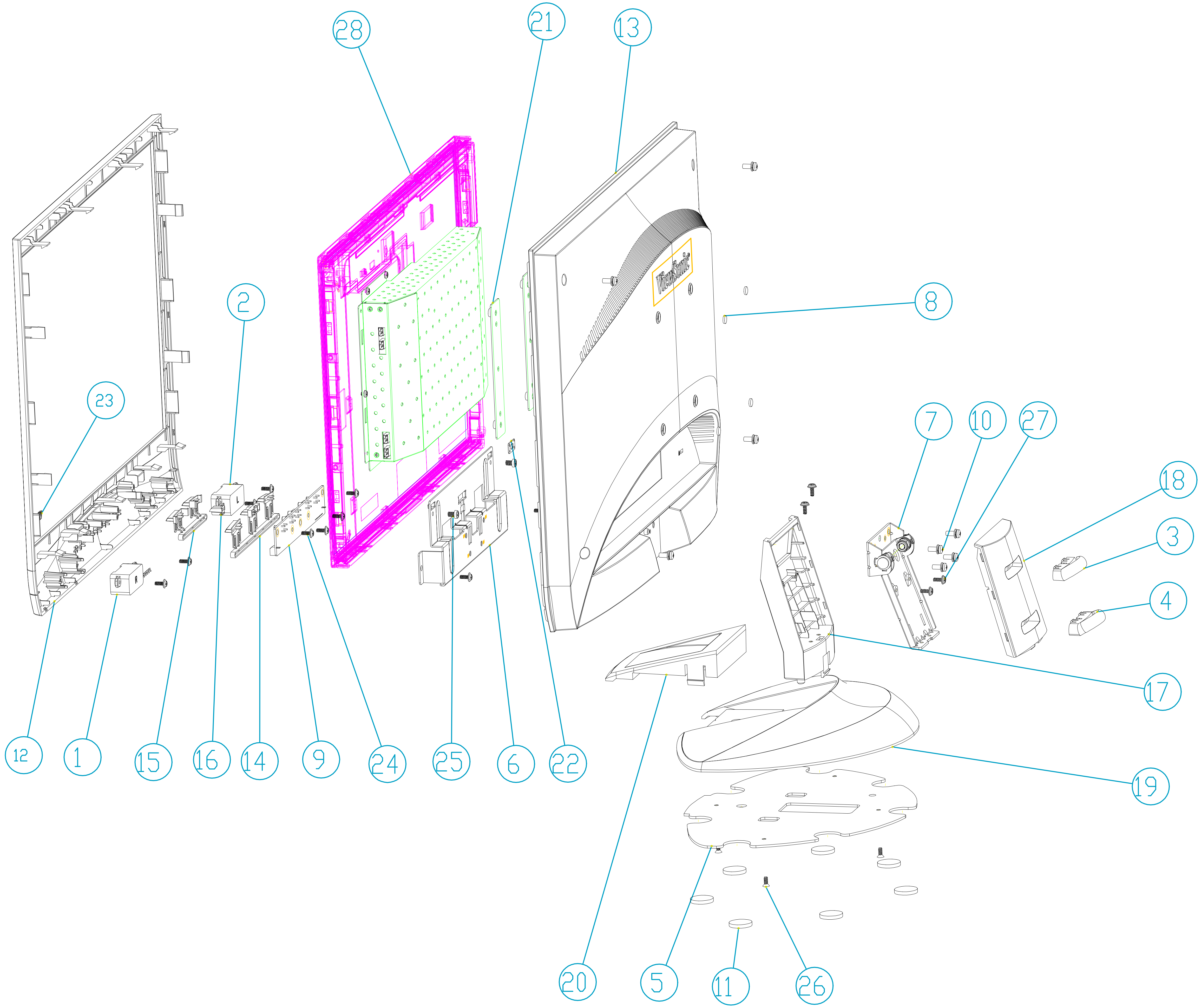
BOM LIST (VX1935wm-1)

ViewSonic Model Number: VS11307
Serial No. Prefix: Q8Y
Rev: 1a

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	A-00008042	72-01193502G000	VX1935 China Packing assy			1
2	N/A	72-01193501G000	VX1935 USA Packing assy			1
3	B-00008074	70-VX193500G000	VX1935 KEY BOARD ASS'Y (Lead Free)			1
4	N/A	62-07000017G000	Viewsonic POP sticker			1
5	N/A	62-07000015G000	ViewSonic Customer label 180*100mm (China)			1
6	N/A	62-07000014G000	Customer label (China)			1
7	DC-00008098	62-07000012G000	5ms sticker			1
8	DC-00008003	62-07000011G000	Hi-Pot Pass Label			1
9	DC-00008002	62-07000010G000	QC-Pass Label (china)			1
10	DC-00008001	62-07000009G000	Energy Star Label			1
11	N/A	62-06000006G000	Barcode label 35*4mm (China)			4
12	N/A	62-06000005G000	BARCODE LABEL 25*12MM			1
13	N/A	62-06000004G000	BARCODE LABEL 50*25MM			1
14	N/A	62-06000003G000	BARCODE LABEL 76.2*76.2MM			1
15	N/A	62-05000027G000	VX1935 ID LABEL TAIWAN			1
16	N/A	62-04000012G000	VX1935 CD User Guide			1
17	N/A	62-03000020G000	ViewSonic Warranty USA 1140*900			1
18	N/A	62-03000018G000	ViewSonic Warranty China			1
19	N/A	62-02000024G000	VX1935 Quick Start Taiwan			1
20	N/A	62-02000022G000	VX1935 Base Guide			1
21	N/A	61-03000011G000	PE bag 750*700mm (China)			1
22	P-00008005	61-03000007G000	PE BAG 500*650mm			1
23	P-00008004	61-03000003G000	U171 PE BAG 225*400MM			1
24	P-00008088	61-01000034G000	VX1935 END CAP-R EPS			1
25	P-00008086	61-01000029G000	VX1935 END CAP EPS			1
26	P-00008085	60-01000032G000	VX1935 Carton Viewsonic Taiwan			1
27	C-00008106	45-VX190213G350	VX1935wm Back Cover Sub-Assy			1
28	C-00008105	45-VX190117G350	VX1935wm Bezel-B + Button-B Sub-Assy			1
29	N/A	43-90000072G300	SCREW M4x10 PH SW+W NI ME			4
30	N/A	43-90000066G410	SCREW M3x8 PHW LW CR3/BL TAP			4
31	N/A	43-04030802G010	SCREW M3*8 FLAT NI TAP			4
32	N/A	43-02040602G000	Screw M4*6 Wafer Head Black-Ni Me			4
33	N/A	43-01030802G110	SCREW M3x8 PAN WASHER NI TAP			12
34	N/A	43-01030402G000	Screw M3*4 Pan Head Ni Me			2
35	M-00008001	42-04260007G000	Bird Logo Brand for Viewsonic AL+PC			1
36	PL-00008002	42-04170008G000	Name plate Brand for Viewsonic AL			1
37	C-00008005	42-02110008G000	Back cover of ESD rubber-2 Black φ7*1.5			4
38	PL-00008001	42-02110002G000	HU171 Rubber Foot Black			7
39	DC-00008099	42-01260011G000	Mylar 425*275*0.1 for 19"W			1
40	N/A	41-07010015G000	VX1935wm Hinge SECC			1
41	N/A	41-03010061G000	VX1935wm speaker bracket SECC			4
42	N/A	41-03010052G000	VX1935M KEY LOCK BRACKET SECC			1
43	N/A	41-03010043G000	VX1935wm Hinge Sup. BKT SECC			1
44	N/A	41-03010042G000	VX1935wm Base BKT SECC			1
45	N/A	41-03010037G000	HX191_WALL MOUNT_BRACKET			2
46	C-00008109	40-11010001G000	VX1935wm Base_cover ABS-HB Silver			1
47	N/A	40-09010004G000	VX1935wm Cable Clipper DownABS-HB Silver			1
48	N/A	40-09010003G000	VX1935wm Cable Clipper Up ABS-HB Silver			1
49	PL-00008024	40-06010019G000	VX1935wm Base ABS-HB Pantone Black-C			1
50	C-00008108	40-05010020G000	VX1935wm Arm_Back cover ABS-HB Silver			1
51	C-00008107	40-05010019G000	VX1935wm Arm_front cover ABS-HB Silver			1
52	N/A	40-04020010G000	VX1935wm Power LENS PC			1
53	N/A	40-03010031G000	VX1935wmButton 2-KeyABS-HB Pantone Black			1
54	N/A	40-03010030G000	VX1935wmButton 3-KeyABS-HB Pantone Black			1
55	N/A	40-02010024G000	VX1935wm Back cover ABS-HB Black			1
56	N/A	40-01010055G000	VX1935wm Bezel ABS-HB Pantone Black-C			1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
57	N/A	39-VX193500G000	VX1935 Key Board PCB Ver : 2.0			1
58	N/A	34-04170017G000	AL Foil W40*L200*T0.1mm			1
59	N/A	33-R3910506G000	CABLE STEREO PHONE(JHEN VEI)			1
60	N/A	33-R3910503G000	DVI CABLE 1800MM(JHEN VEI)			1
61	N/A	33-R3910501G000	CABLE SIGNAL D/15P-15P(M)1800MM-JHEN VEI			1
62	A-00008038	33-E3980005G000	PWR CORD CHN 250V/10A 1.8M 3C BLK"Linetek"			1
63	N/A	33-B1540503G000	DVI CABLE 1800MM WHITE SZE60288B(GLET)			1
64	CB-00008001	33-00090501G000	CABLE SIGNAL D/15P-15P(M)1800MM			1
65	A-00008003	33-00080002G000	PWR CORD CHINA 250V/10A 1800MM LF			1
66	N/A	33-00080000G000	PWR CORD AMERICAN(UL/CSA) 125V/10A 1800m			1
67	CB-00008003	33-00070500G000	CABLE STEREO PHONE SZE33261B			1
68	N/A	32-31012085G000	CONN W TO B 12P P*2.0 C1U2X-XX0VX(TACT)			1
69	N/A	32-31002083G000	CONN W TO B 2P P*2.0 C1U2X-XX0VX(TACT)			2
70	N/A	31-10400100G000	SW TACT 160GF DIP TSAC-2L			5
71	E-00008005	30-V9031R51G000	VA903 SPEAKER 1.5W/8R LEFT			1
72	E-00008004	30-V9031R50G000	VA903 SPEAKER 1.5W/8R RIGHT			1
73	E-00008004	30-V9031R50G000	VA903 SPEAKER 1.5W/8R RIGHT (China)			1
74	N/A	20-9MB04139G040	LED BLUE/Orange3P DIP (ENGYA)			1
75	E-00008073	190SGW1-A00	LIQUID CRYSTAL DEVICE HSD190SGW1-A			1
76	N/A	06-Y3352200G000	Bin Code VX1935_ DR_HSD190SGW1A00R30.2			1
77	N/A	04-1VX19GW1G100	EDID VX1935WM_190MGW1_EDID_D			1
78	N/A	04-1VX19GW1G000	EDID VX1935WM_190MGW1_EDID_A			1

8. Exploded Diagram and Exploded Parts List



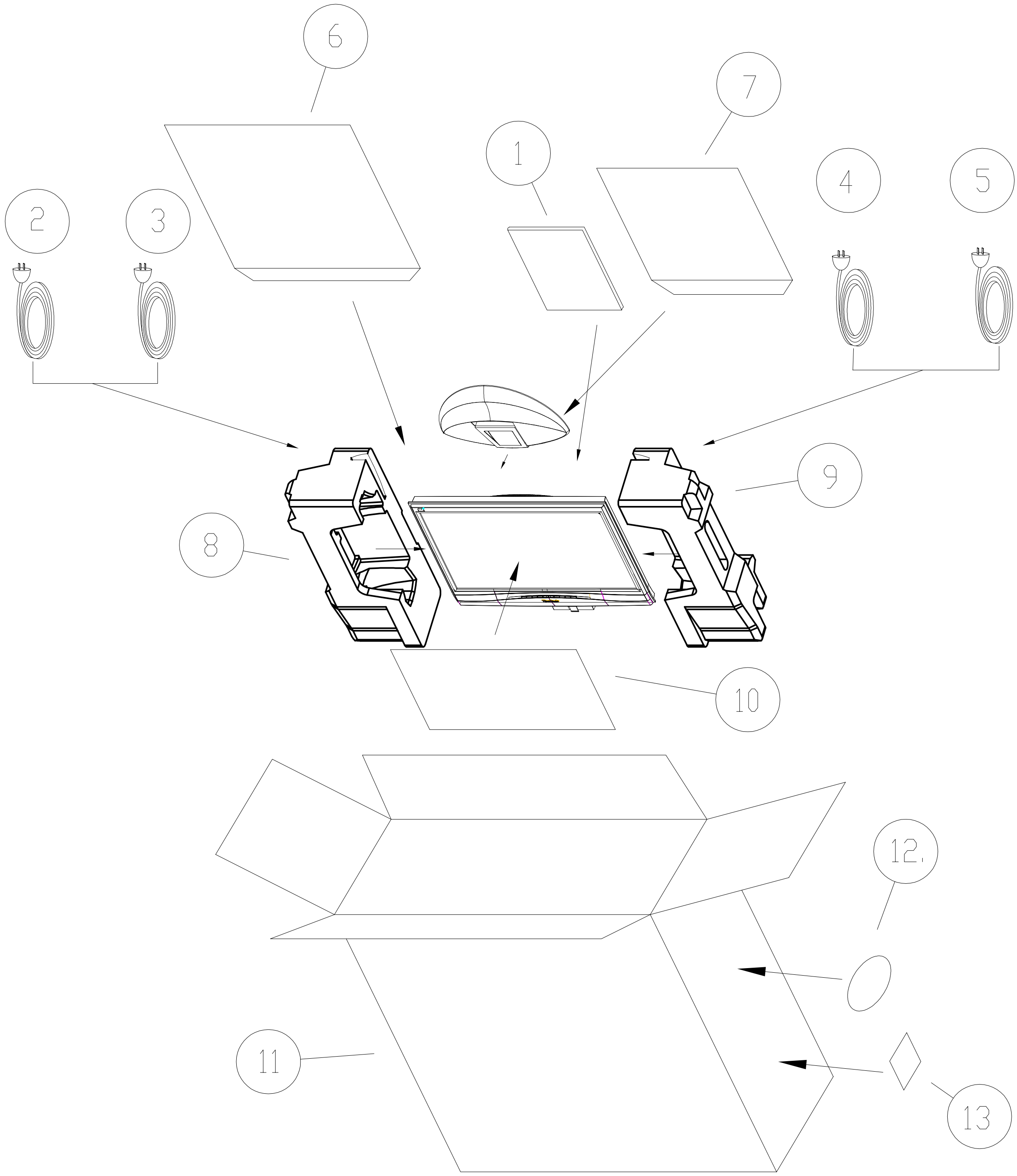
EXPLODED PARTS LIST (VX1935wm-1)

ViewSonic Model Number: VS11307

Rev: 1a

Serial No. Prefix: Q8Y

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	E-00008004	30-V9031R50G000	VA903 SPEAKER 1.5W/8R RIGHT	1
2	E-00008005	30-V9031R51G000	VA903 SPEAKER 1.5W/8R LEFT	1
3	N/A	40-09010003G000	VX1935wm Cable Clipper Up ABS-HB Silver	1
4	N/A	40-09010004G000	VX1935wm Cable Clipper Down ABS-HB Silver	1
5	N/A	41-03010042G000	VX1935wm Base BKT SECC	1
6	N/A	41-03010043G000	VX1935wm Hinge Sup. BKT SECC	1
7	N/A	41-07010015G000	VX1935wm Hinge SECC	1
8	C-00008005	42-02110008G000	Back cover of ESD rubber-2 Black φ7*1.5	4
9	B-00008074	70-VX193500G000	VX1935 KEY BOARD ASS'Y (Lead Free)	1
10	N/A	43-90000072G300	SCREW M4x10 PH SW+W NI ME	8
11	PL-00008001	42-02110002G000	HU171 Rubber Foot Black	7
12	N/A	40-01010055G000	VX1935wm Bezel ABS-HB Pantone Black-C	1
13	N/A	40-02010024G000	VX1935wm Back cover ABS-HB Black	1
14	N/A	40-03010030G000	VX1935wmButton 3-KeyABS-HB Pantone Black	1
15	N/A	40-03010031G000	VX1935wmButton 2-KeyABS-HB Pantone Black	1
16	N/A	40-04020010G000	VX1935wm Power LENS PC	1
17	C-00008107	40-05010019G000	VX1935wm Arm_front cover ABS-HB Silver	1
18	C-00008108	40-05010020G000	VX1935wm Arm_Back cover ABS-HB Silver	1
19	PL-00008024	40-06010019G000	VX1935wm Base ABS-HB Pantone Black-C	1
20	C-00008109	40-11010001G000	VX1935wm Base_cover ABS-HB Silver	1
21	N/A	41-03010037G000	HX191_WALL MOUNT_BRACKET	2
22	N/A	41-03010052G000	VX1935M KEY LOCK BRACKET SECC	1
23	PL-00008002	42-04170008G000	Name plate Brand for Viewsonic AL	1
24	N/A	43-01030802G000	SCREW M3x4 PAN,NI,ME	10
25	N/A	43-01040604G000	SCREW M4*6 PAN BZ ME	2
26	N/A	43-04030802G010	SCREW M3*8 FLAT NI TAP	4
27	N/A	43-90000066G410	SCREW M3x8 PHW LW CR3/BL TAP	4
28	E-00008073	190SGW1-A00	LIQUID CRYSTAL DEVICE HSD190SGW1-A	1



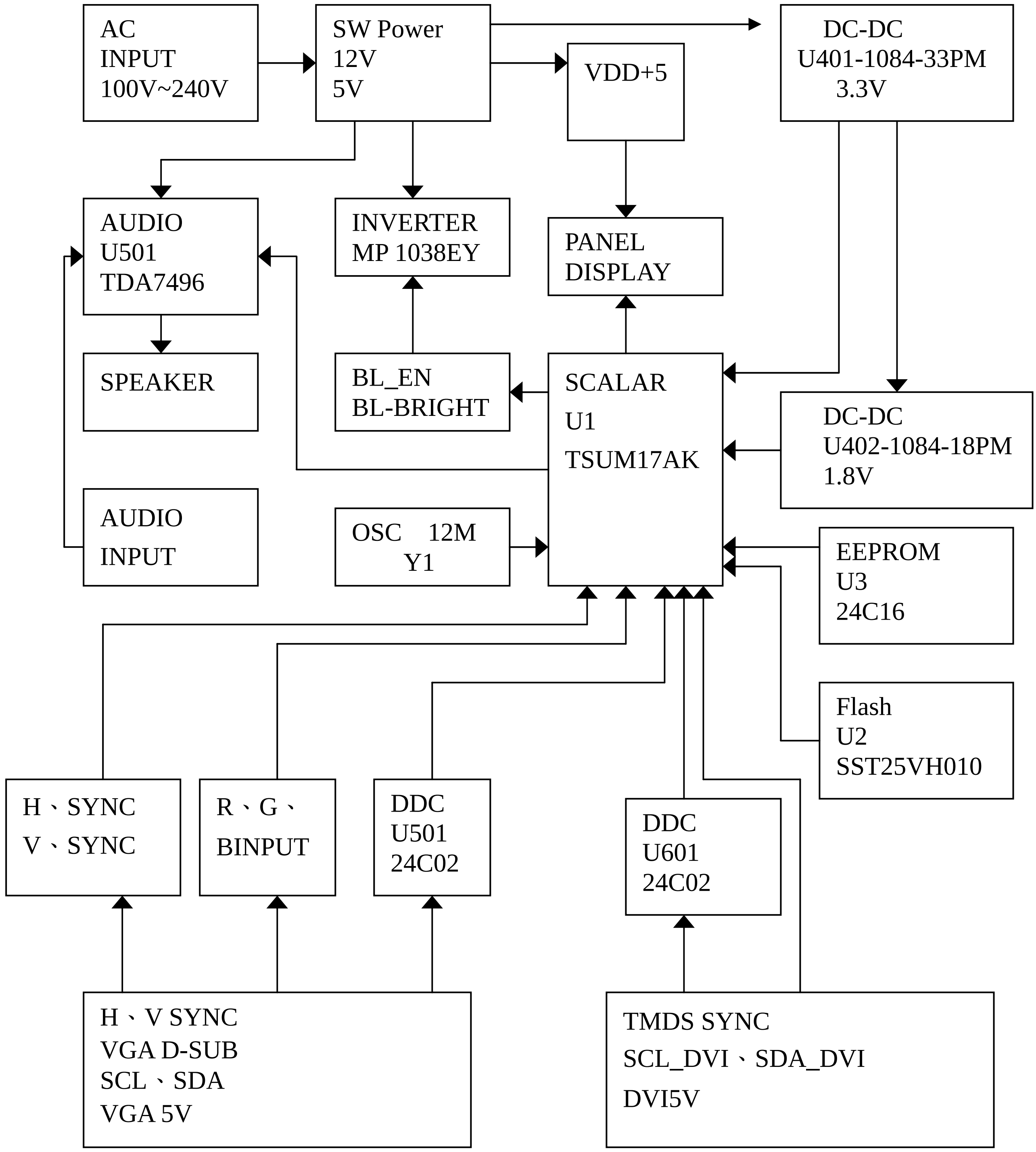
PACKING PART LIST (VX1935wm-1)

ViewSonic Model Number: VS11307

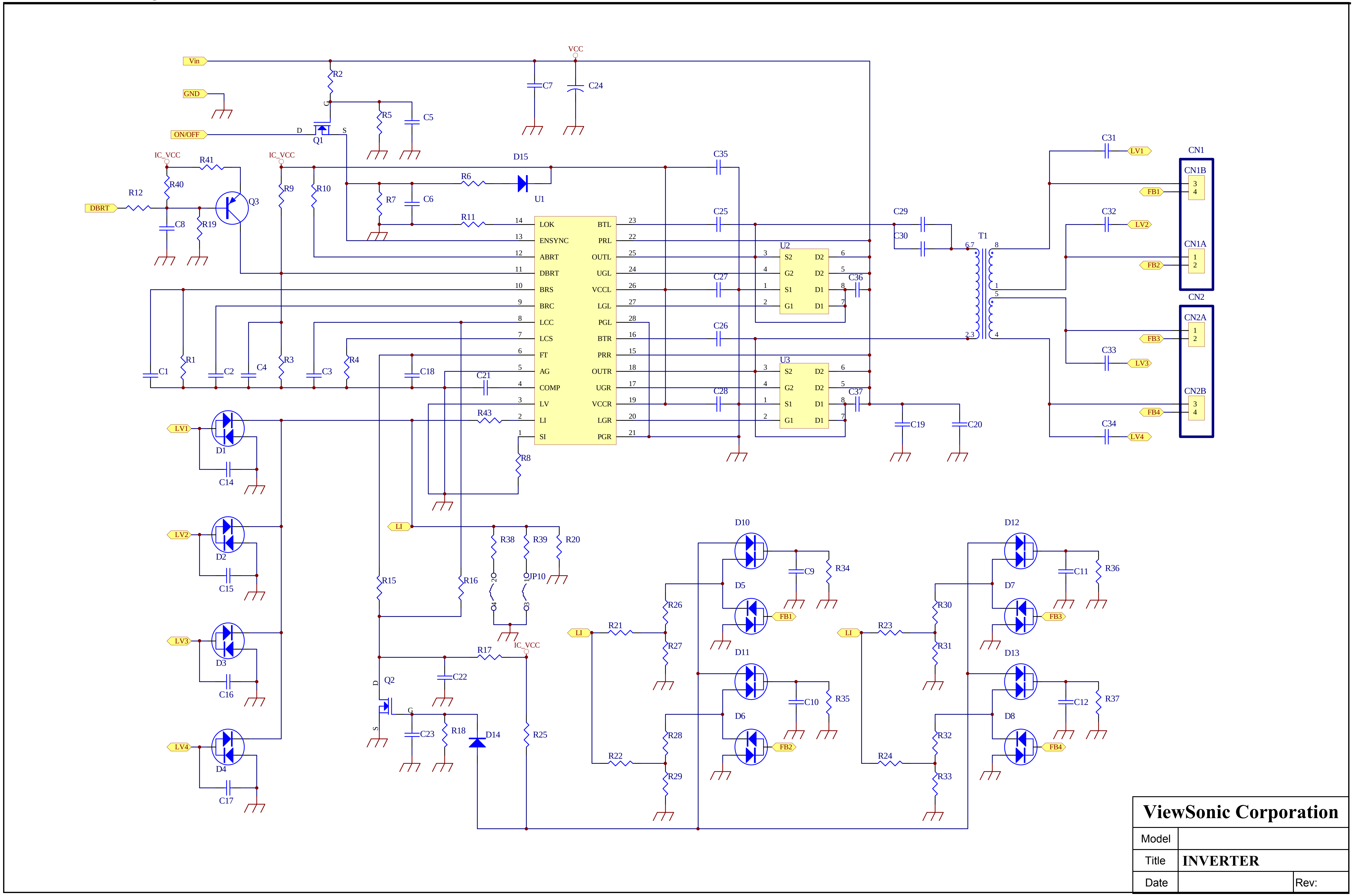
Rev: 1a

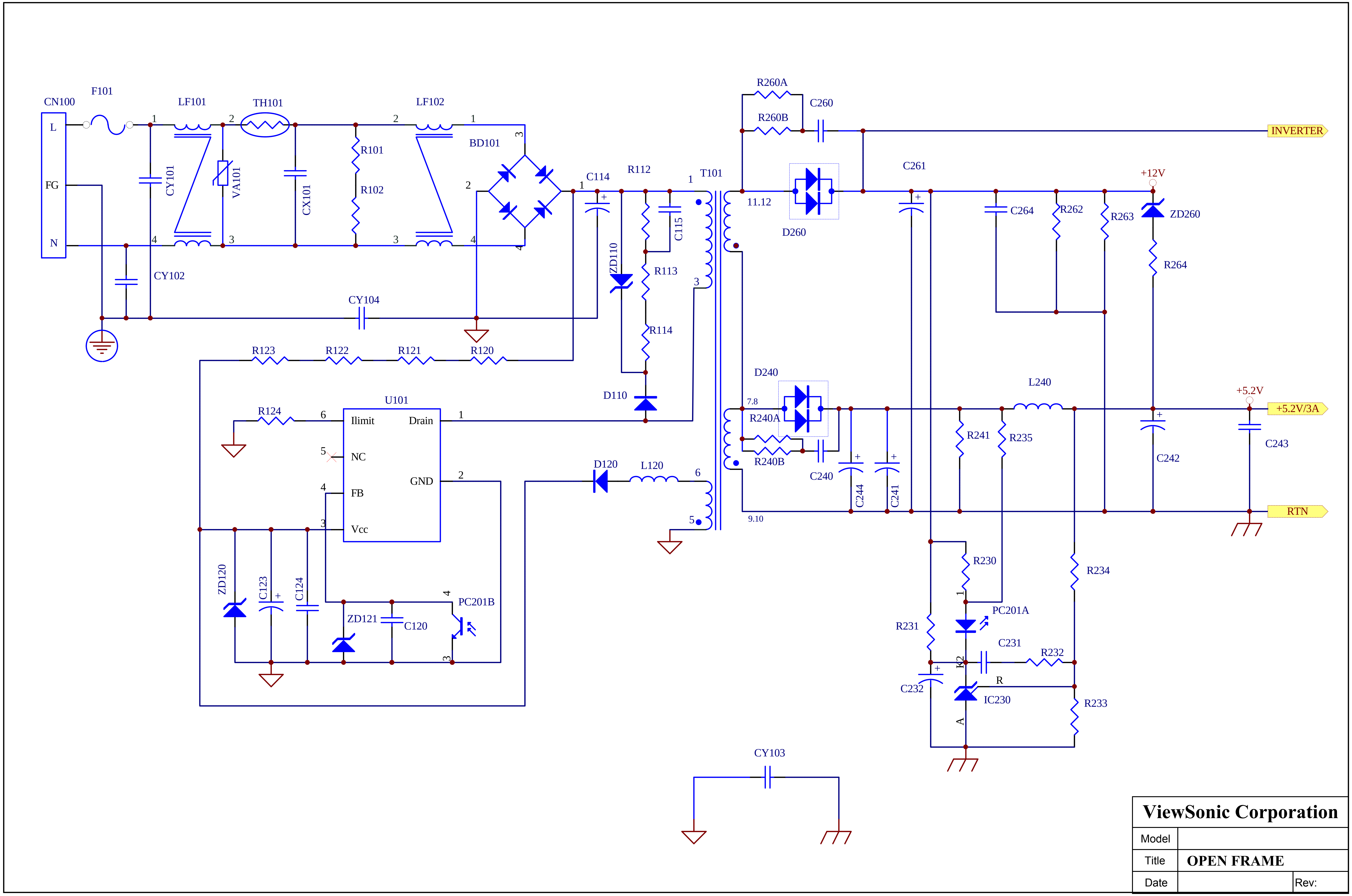
Item	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	N/A	62-04000012G000	VX1935 CD User Guide	1
2	N/A	33-R3910501G000	CABLE SIGNAL D/15P-15P(M)1800MM-JHEN VEI	1
3	N/A	33-R3910503G000	DVI CABLE 1800MM(JHEN VEI)	1
4	N/A	33-R3910506G000	CABLE STEREO PHONE(JHEN VEI)	1
5	A-00008004	33-E3980011G000	PWR CORD TWN 125V/7A 1.8M 3C BLK "Linetek"	1
6	P-00008005	61-03000007G000	PE BAG 500*650mm	1
7	P-00008004	61-03000003G000	U171 PE BAG 225*400MM	1
8	P-00008086	61-01000029G000	VX1935 END CAP EPS	1
9	P-00008088	61-01000034G000	VX1935 END CAP-R EPS	1
10	DC-00008099	42-01260011G000	Mylar 425*275*0.1(Protective Film) for 19"W	1
11	P-00008085	60-01000032G000	VX1935 Carton Viewsonic Taiwan	1
12	DC-00008098	62-07000012G000	5ms sticker	1
13	N/A	62-06000003G000	BARCODE LABEL 76.2*76.2MM	1

9. Block Diagram



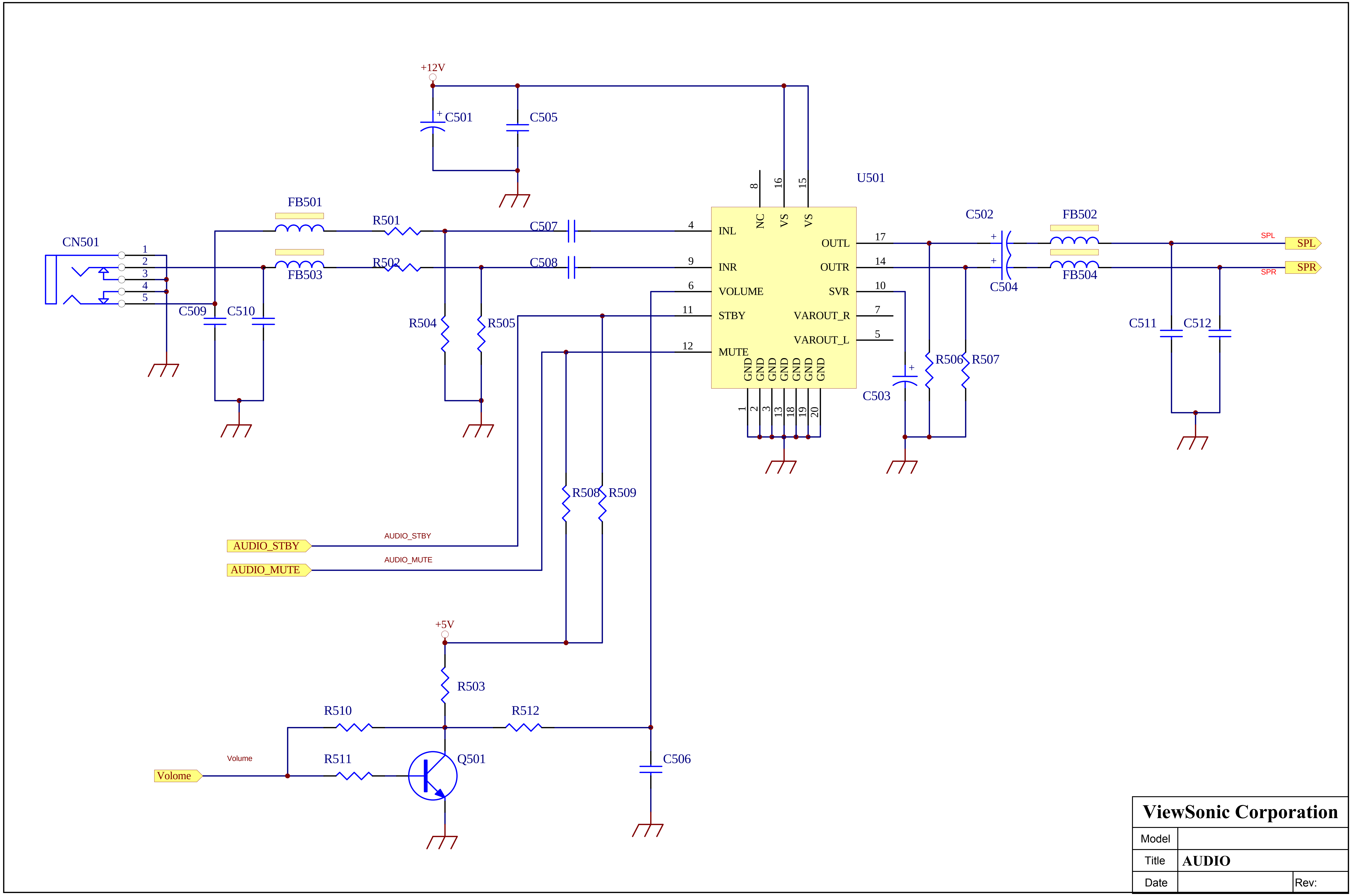
10. Schematic Diagrams

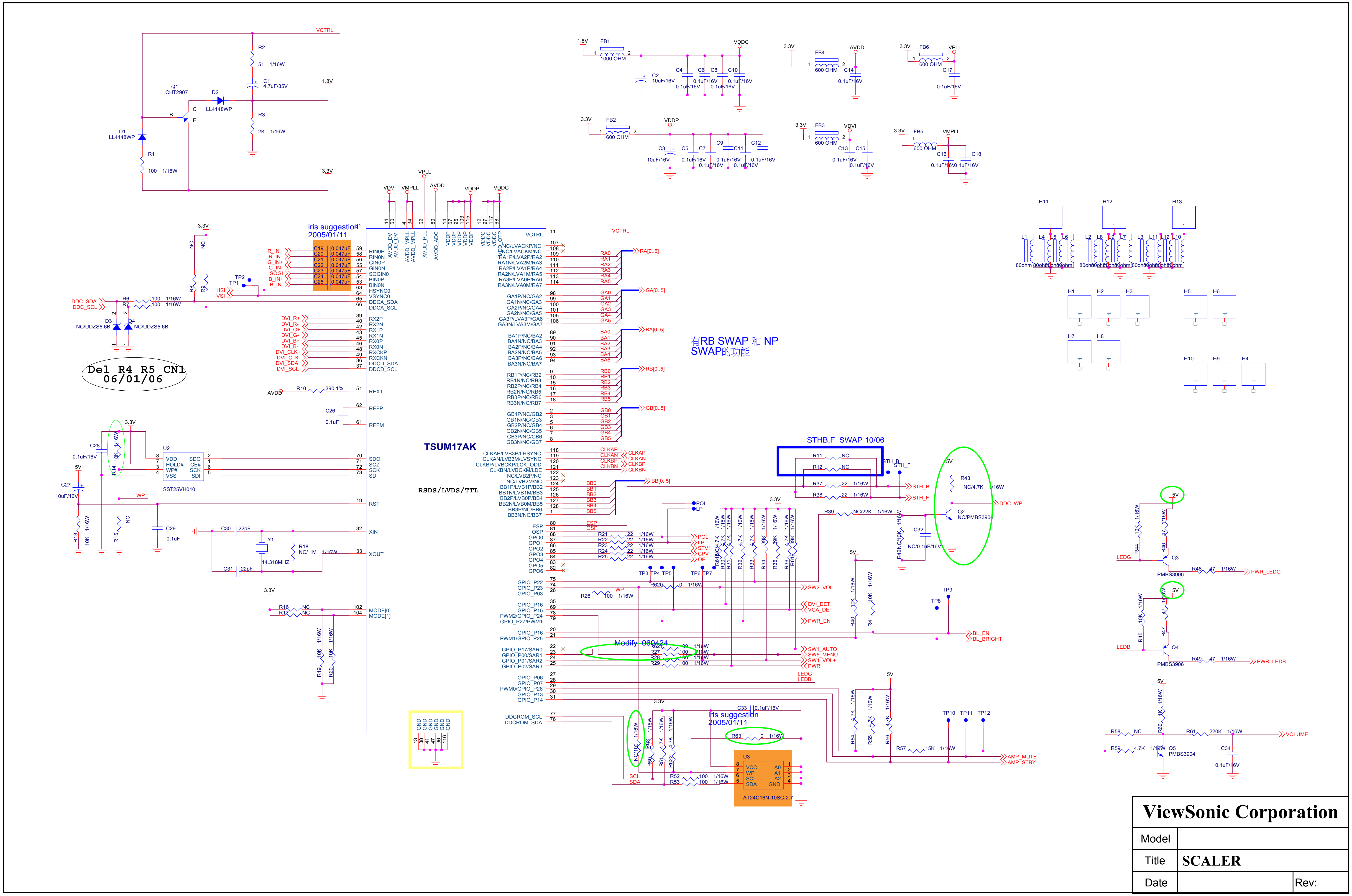


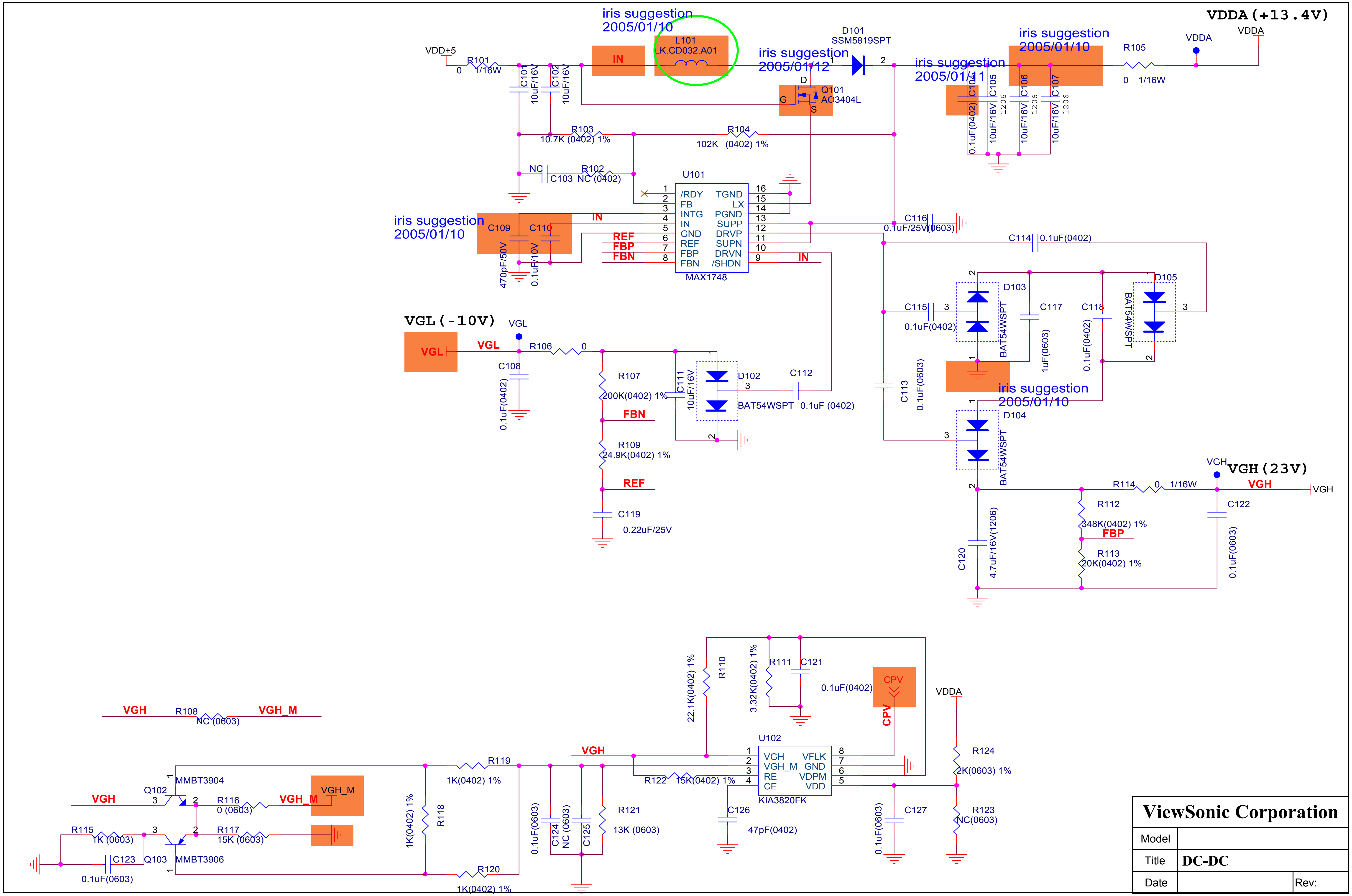


ViewSonic Corporation

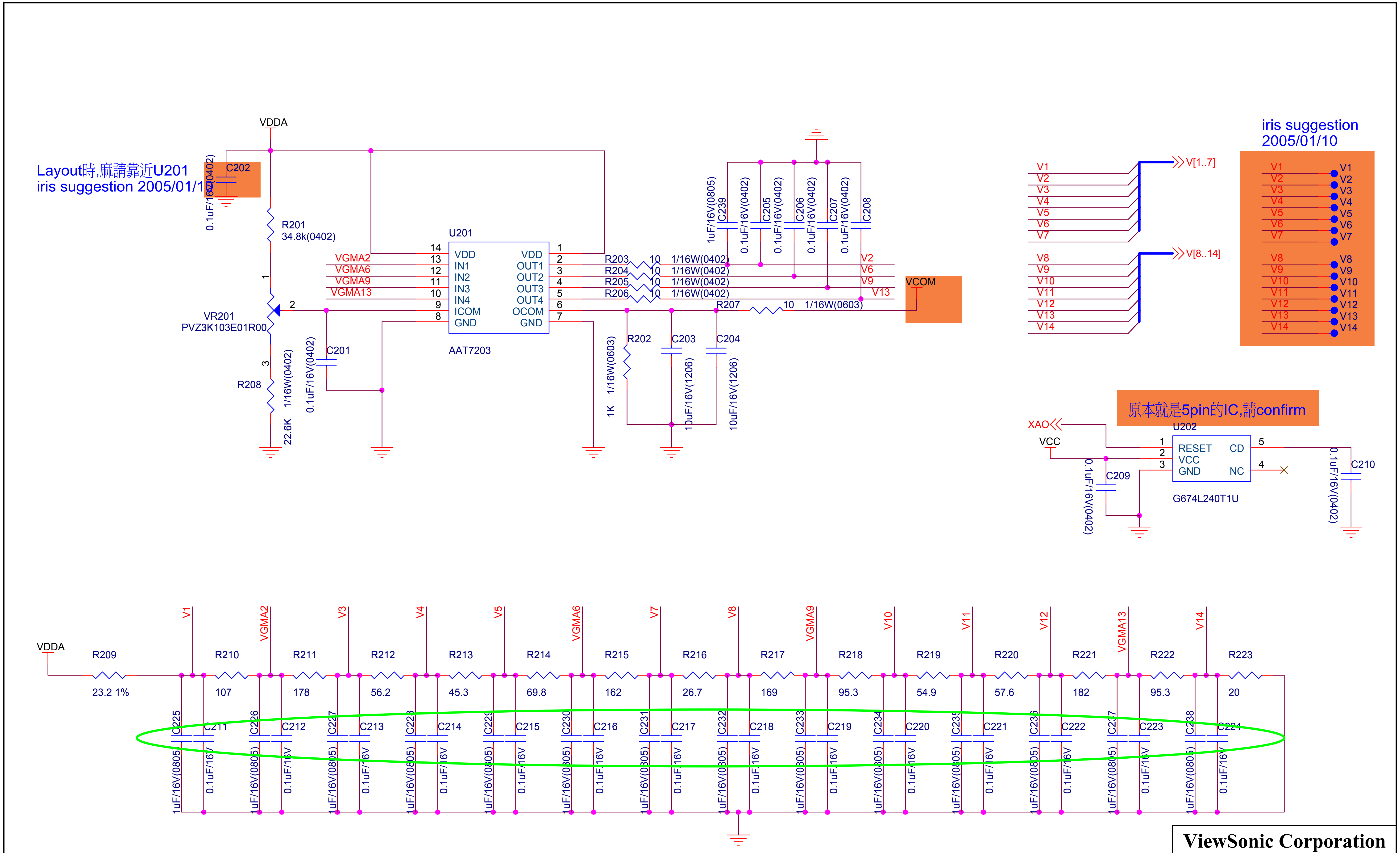
Model	
Title	OPEN FRAME
Date	Rev:


+12V
C501
C505
U501
FB501
R501
C507
CN501
FB503
R502
C508
C509
C510
R504
R505
INL
INR
VOLUME
STBY
MUTE
NC
VS
VS
OUTL
OUTR
SVR
VAROUT_R
VAROUT_L
GND
C502
FB502
C504
FB504
SPL
SPR
C511
C512
R506
R507
C503
R508
R509
AUDIO_STBY
AUDIO_MUTE
+5V
R503
R510
R512
R511
Q501
C506
Volume
Volome
ViewSonic Corporation
Model
Title
AUDIO
Date
Rev:

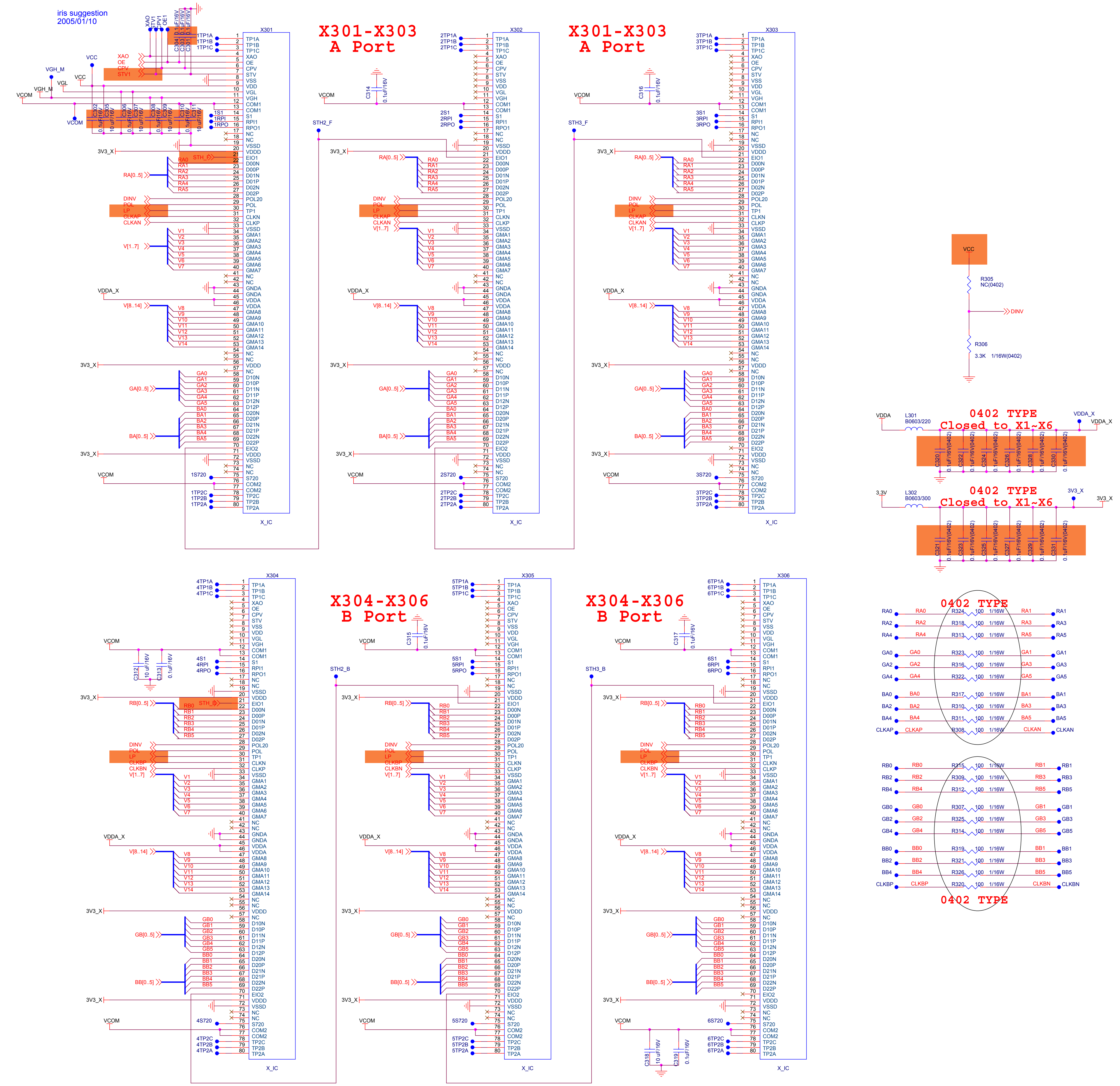

TSUM17AK
RSDS/LVDS/TTL
iris suggestion
2005/01/11
Del R4 R5 CN1
06/01/06
有RB SWAP 和 NP
SWAP的功能
STHB,F SWAP 10/06
Modify 060424
SST25VH010
AT24C16N-10SC-2.7
14.318MHZ
VCTRL
DDC_SDA
DDC_SCL
DDC_WP
PWR_LEDG
PWR_LEDB
VOLUME
AMP_MUTE
AMP_STBY
BL_EN
BL_BRIGHT
SW2_VOL-
DVI_DET
VGA_DET
PWR_EN
SW1_AUTO
SW5_MENU
SW4_VOL+
PWR
STH_B
STH_F
RA[0..5]
GA[0..5]
BA[0..5]
RB[0..5]
GB[0..5]
BB[0..5]
CLKAP
CLKAN
CLKBP
CLKBN
ViewSonic Corporation
Model
Title SCALER
Date
Rev:



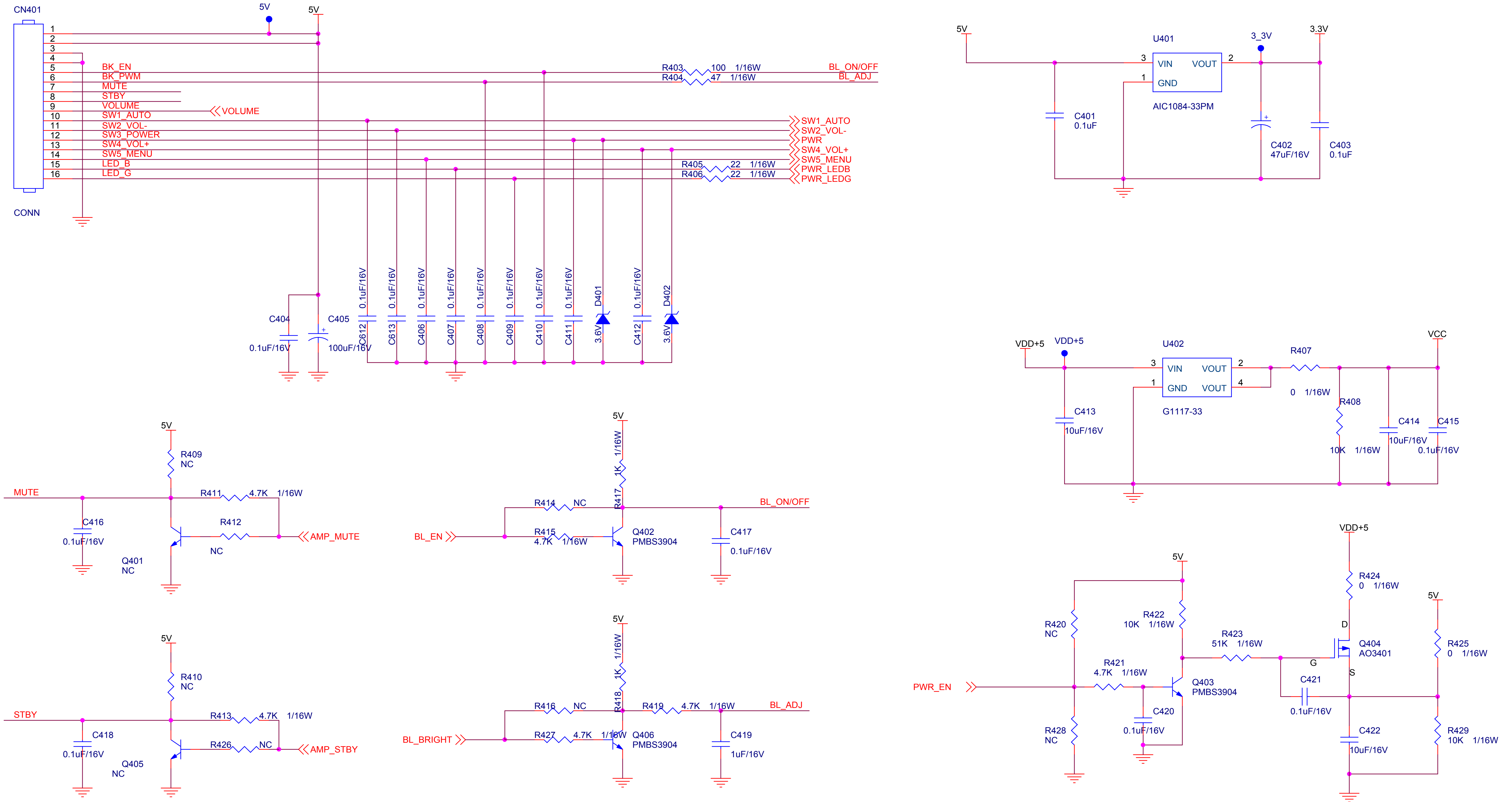
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Model	
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Date	Rev:



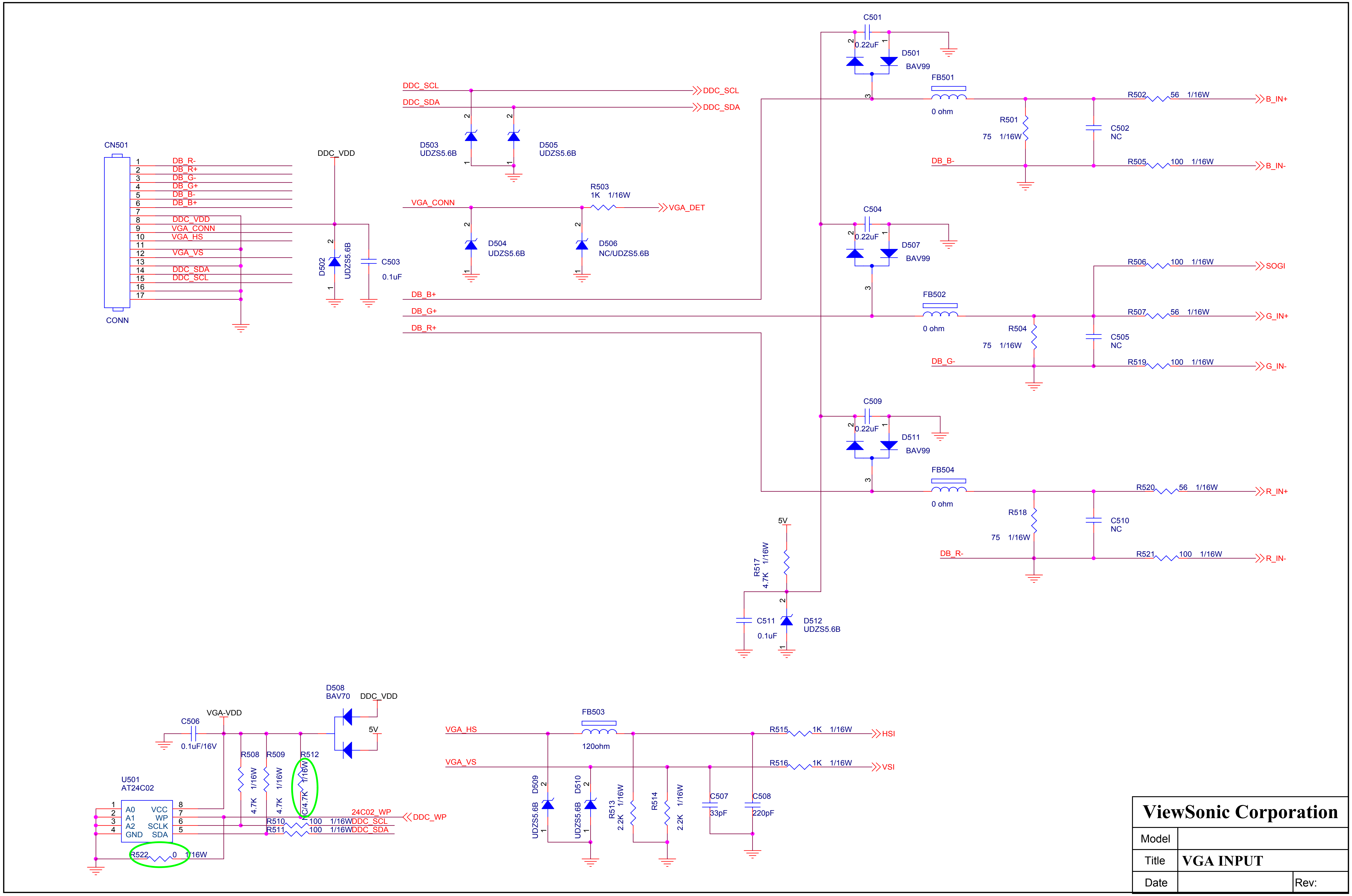
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Model	
Title	VGMA
Date	Rev:



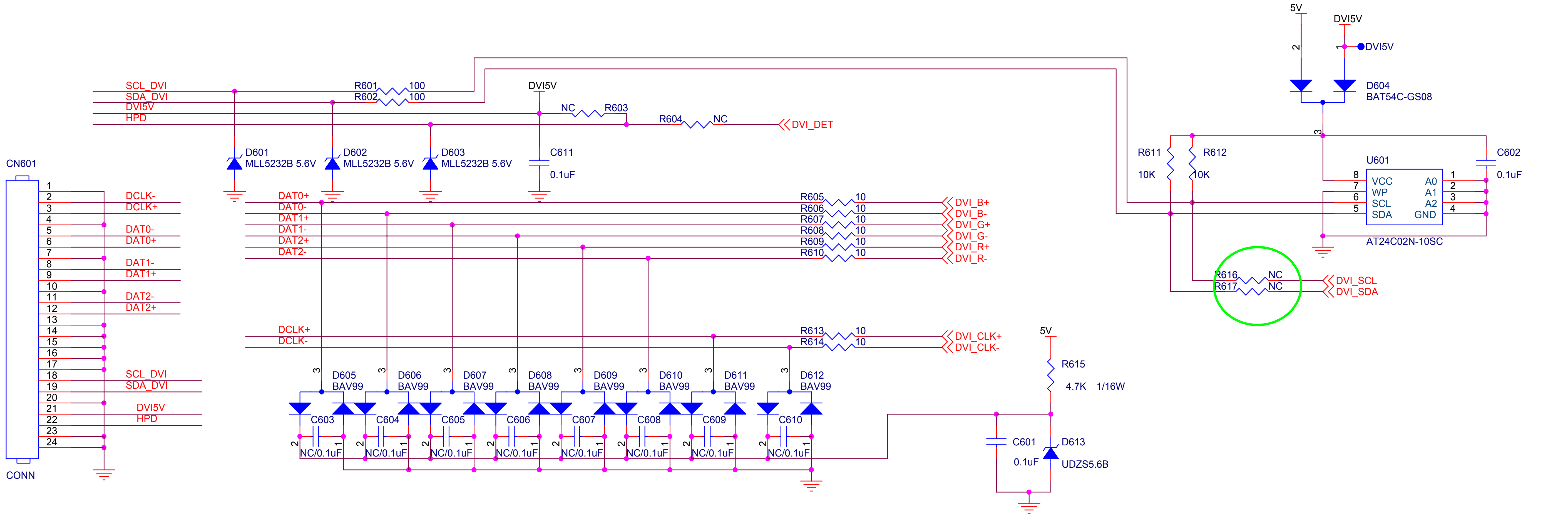
ViewSonic Corporation		
Model		
Title	X1-X6	
Date		Rev:



ViewSonic Corporation	
Model	
Title	POWER
Date	Rev:

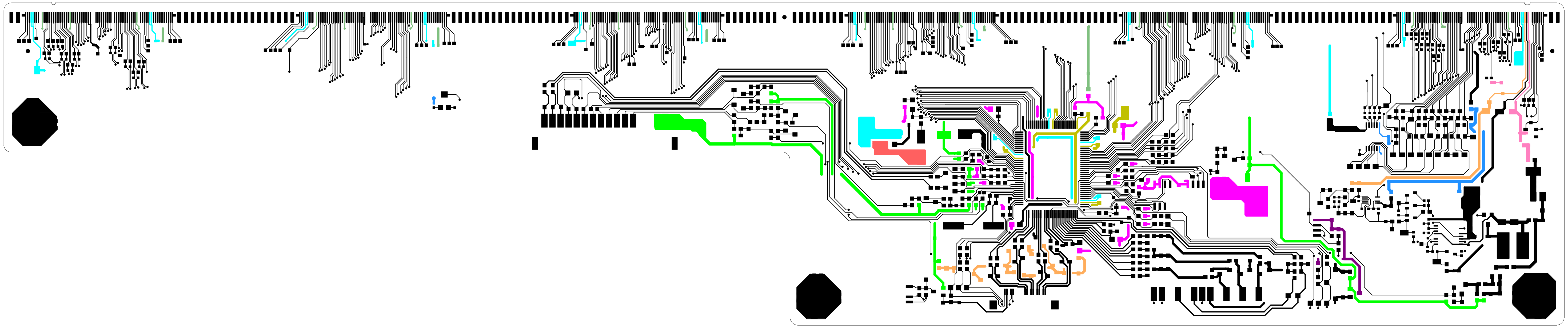


ViewSonic Corporation	
Model	
Title	VGA INPUT
Date	Rev:

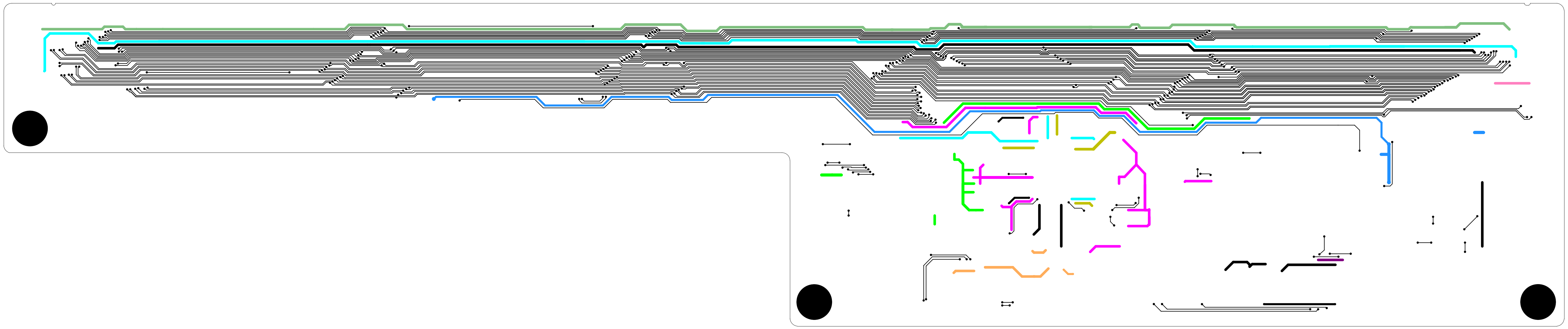


ViewSonic Corporation		
Model		
Title	DVI-IN	
Date		Rev:

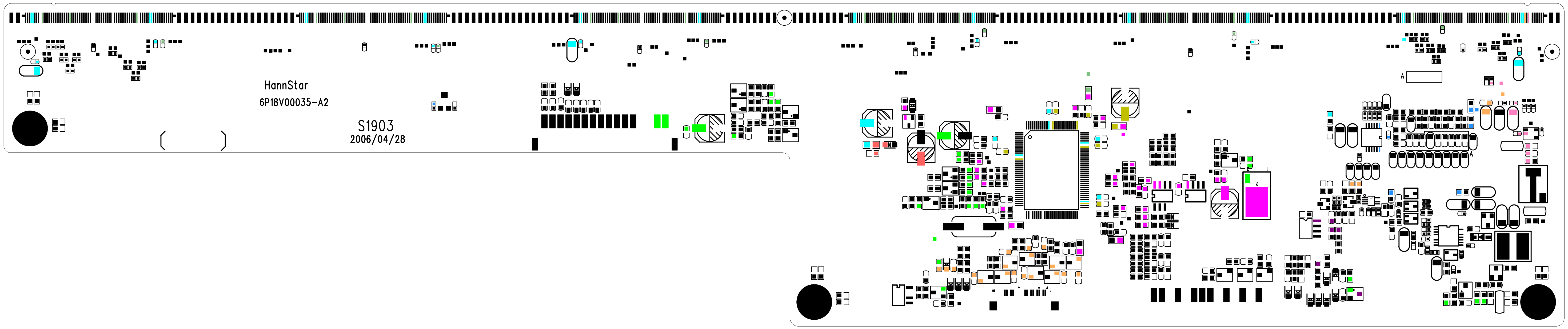
TOP SIDE



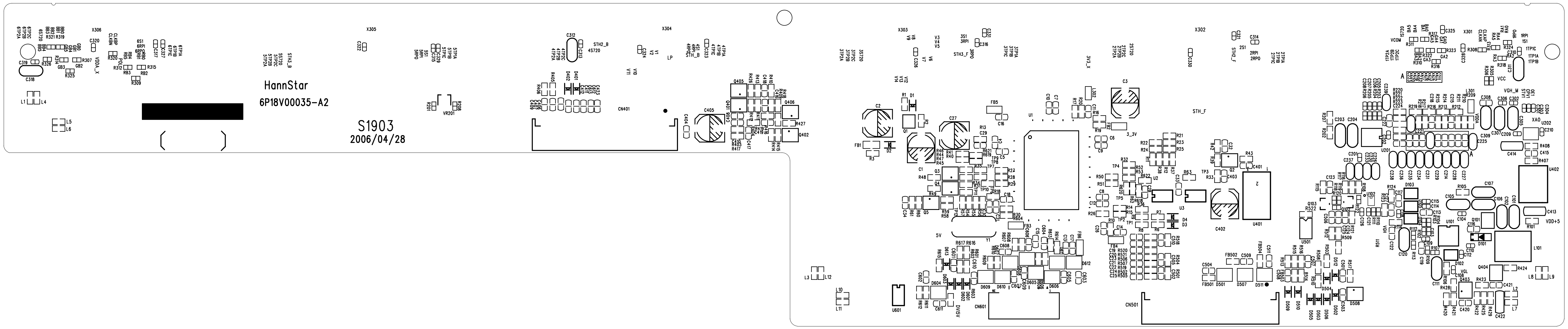
BOTTOM



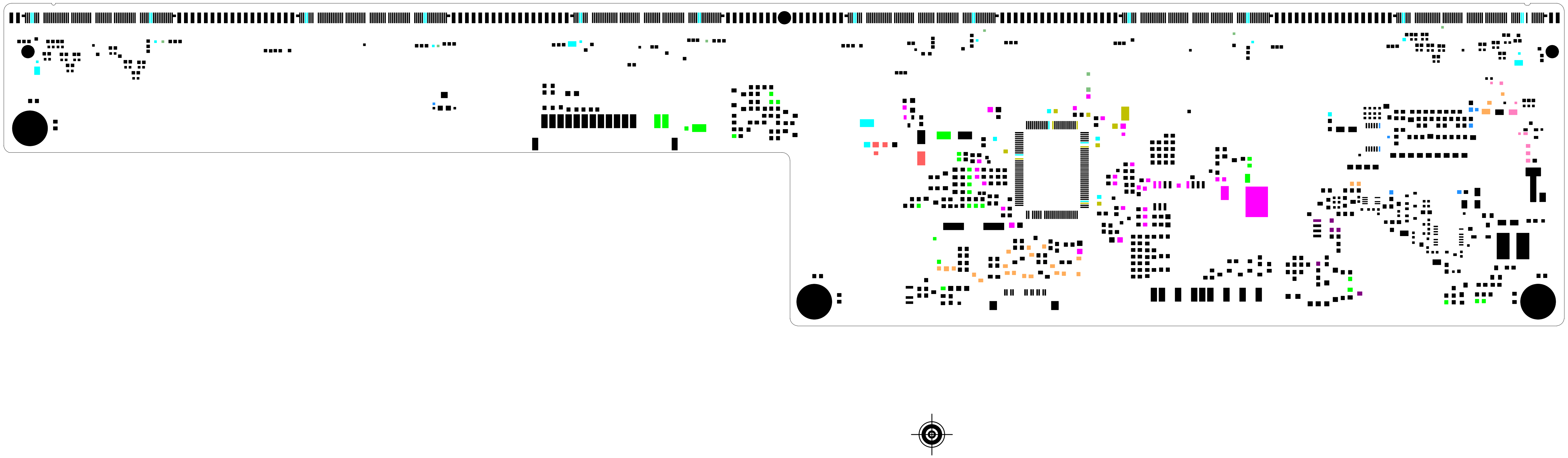
SILKSCREEN-BOTTOM



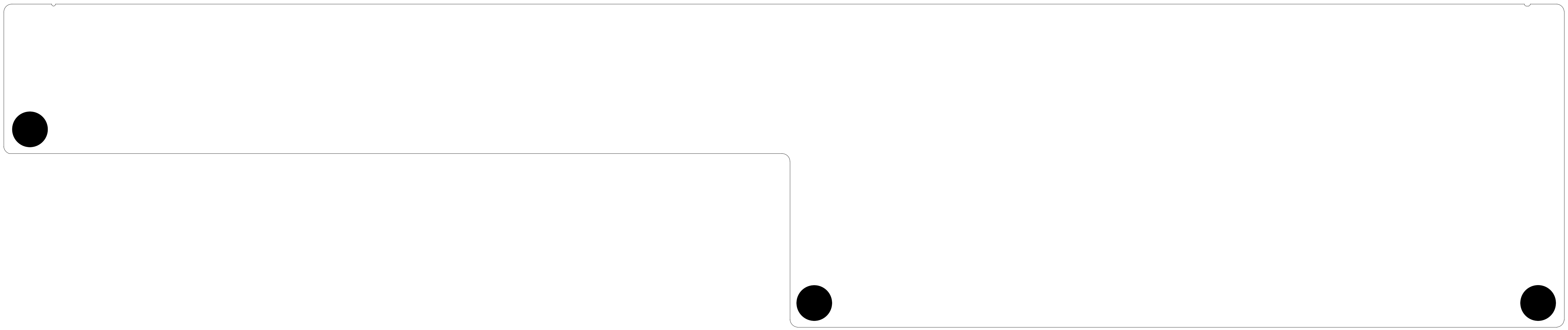
SILKSCREEN-TOP



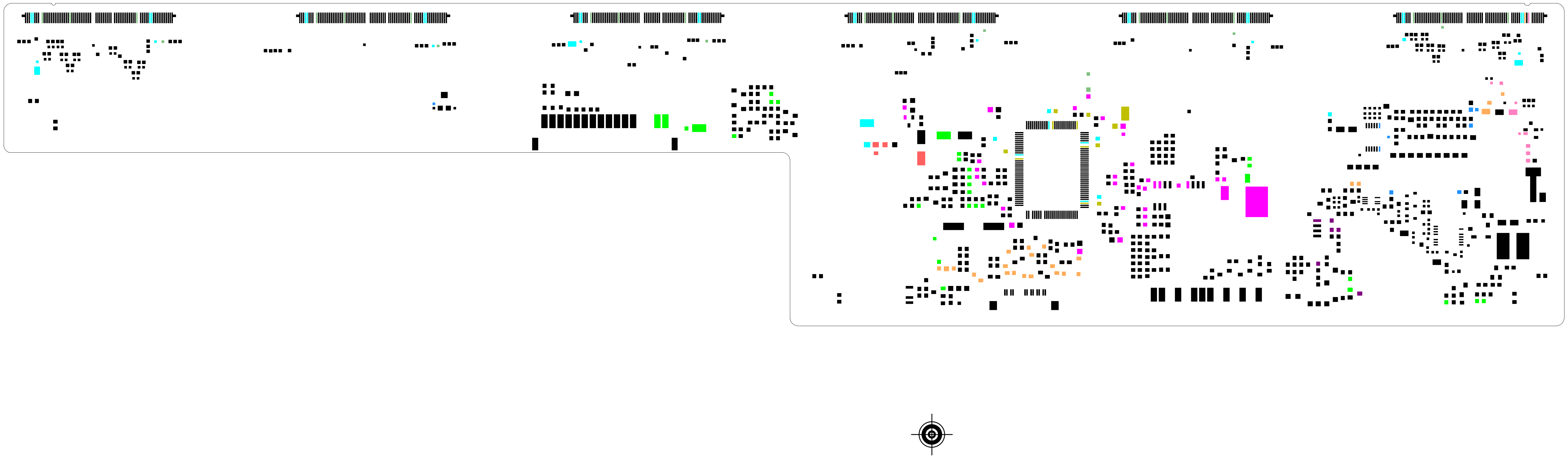
MASK-TOP



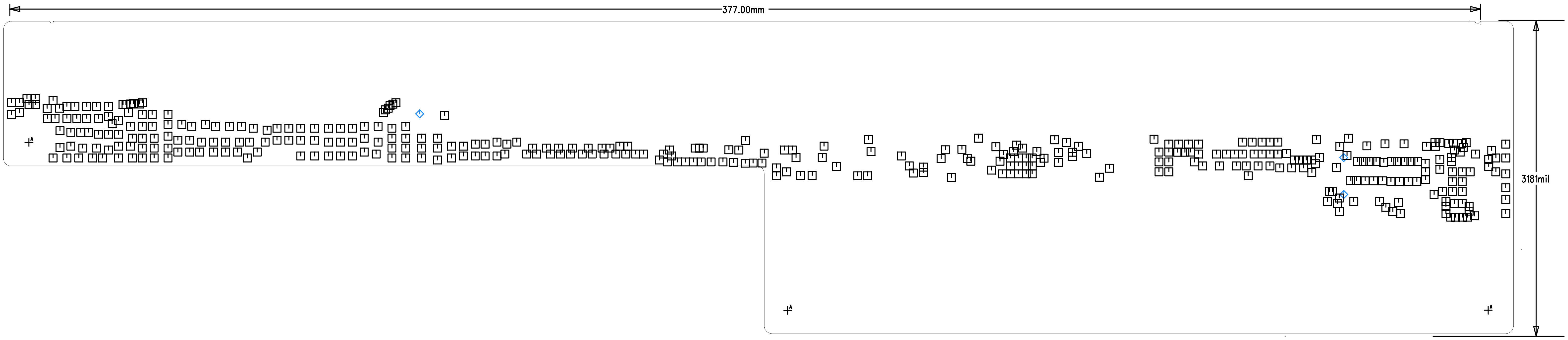
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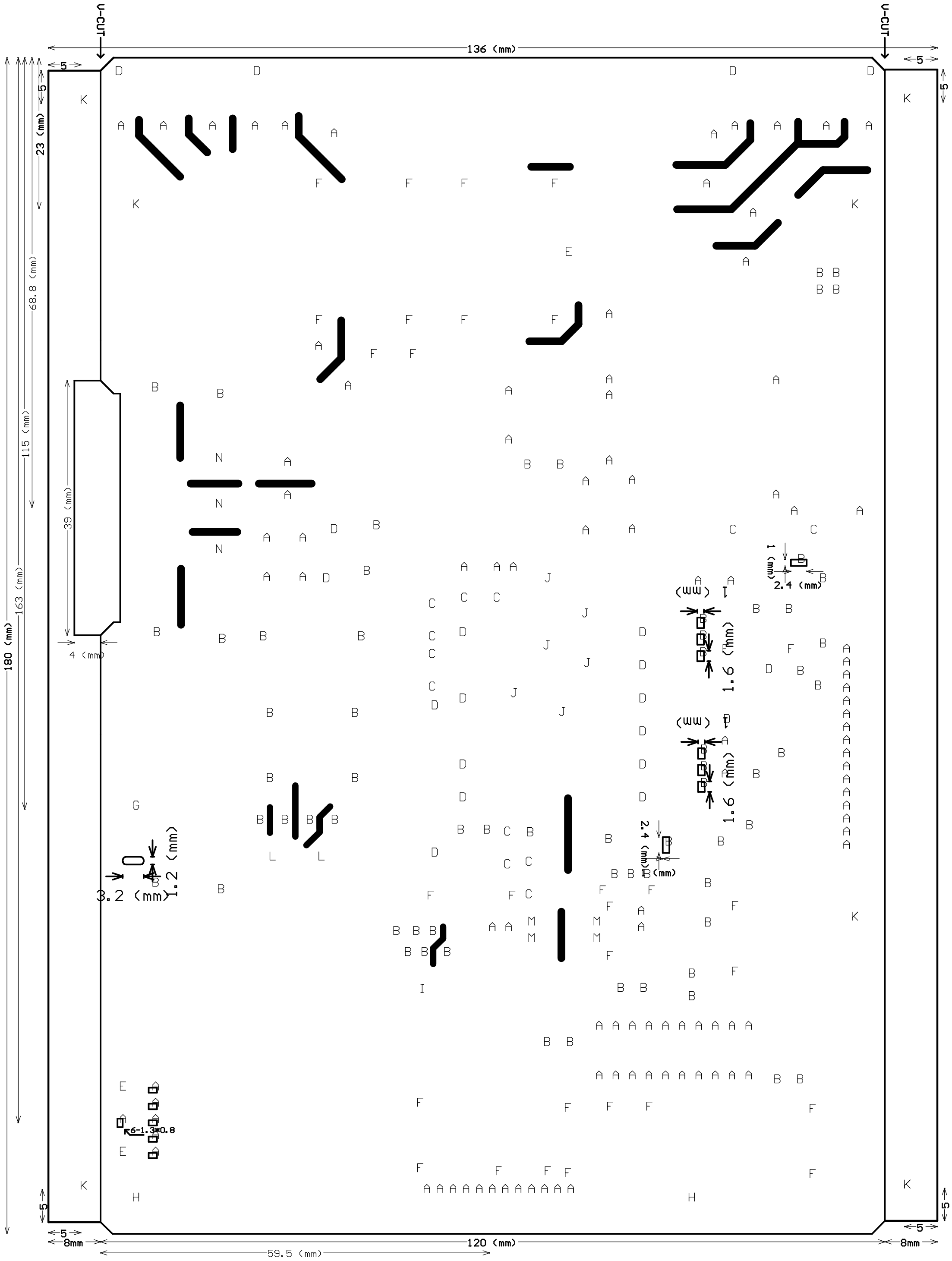
SMD-TOP



DRILL DRAWING

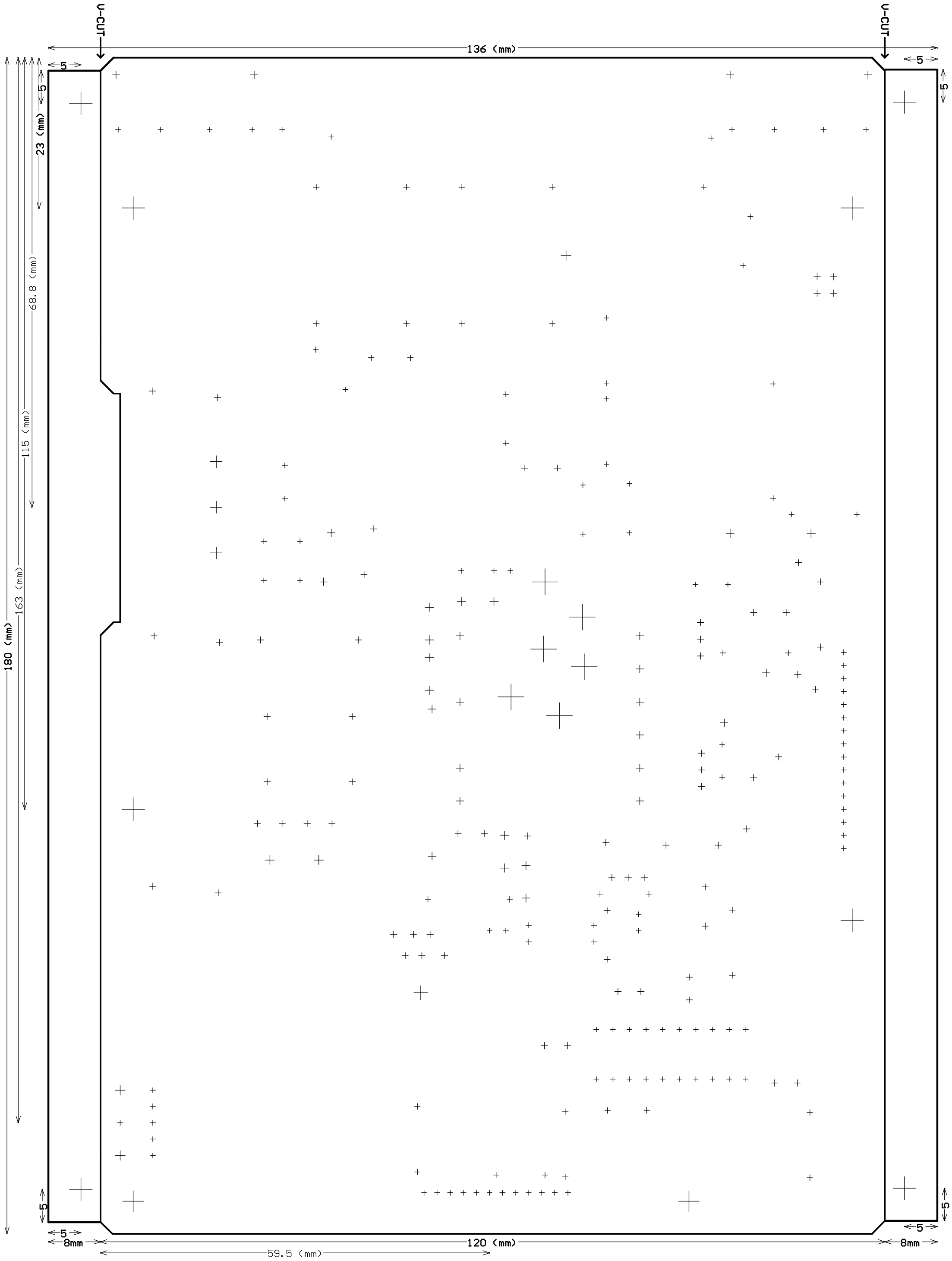


SIZE	QTY	SYM	PLTD
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16	3	◇	PLTD
157	3	A	PLTD

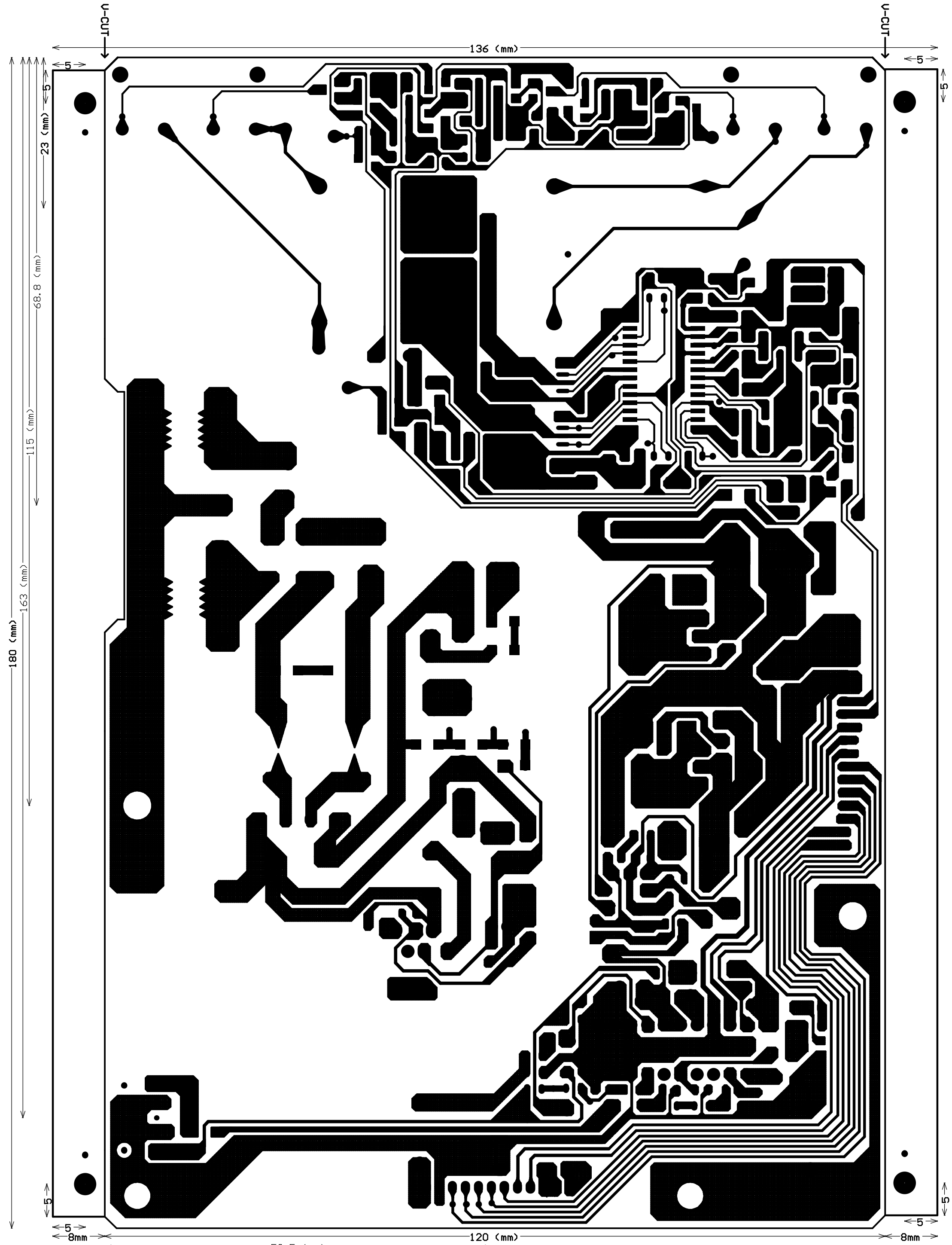


A	101	31.496mil	0.8mm	PTH
M	4	32mil	0.8128mm	PTH
F	30	35.433mil	0.9mm	PTH
B	65	39.37mil	1mm	PTH
D	20	47.244mil	1.2mm	PTH
C	12	51.181mil	1.3mm	PTH
L	2	55.118mil	1.4mm	PTH
E	3	59.055mil	1.5mm	PTH
N	3	70.866mil	1.8mm	PTH
I	1	86.614mil	2.2mm	PTH
H	2	125.984mil	3.2mm	PTH
G	1	137.795mil	3.49999mm	PTH
K	7	137.795mil	3.5mm	PTH
J	6	157.48mil	4mm	PTH
	257	Total		

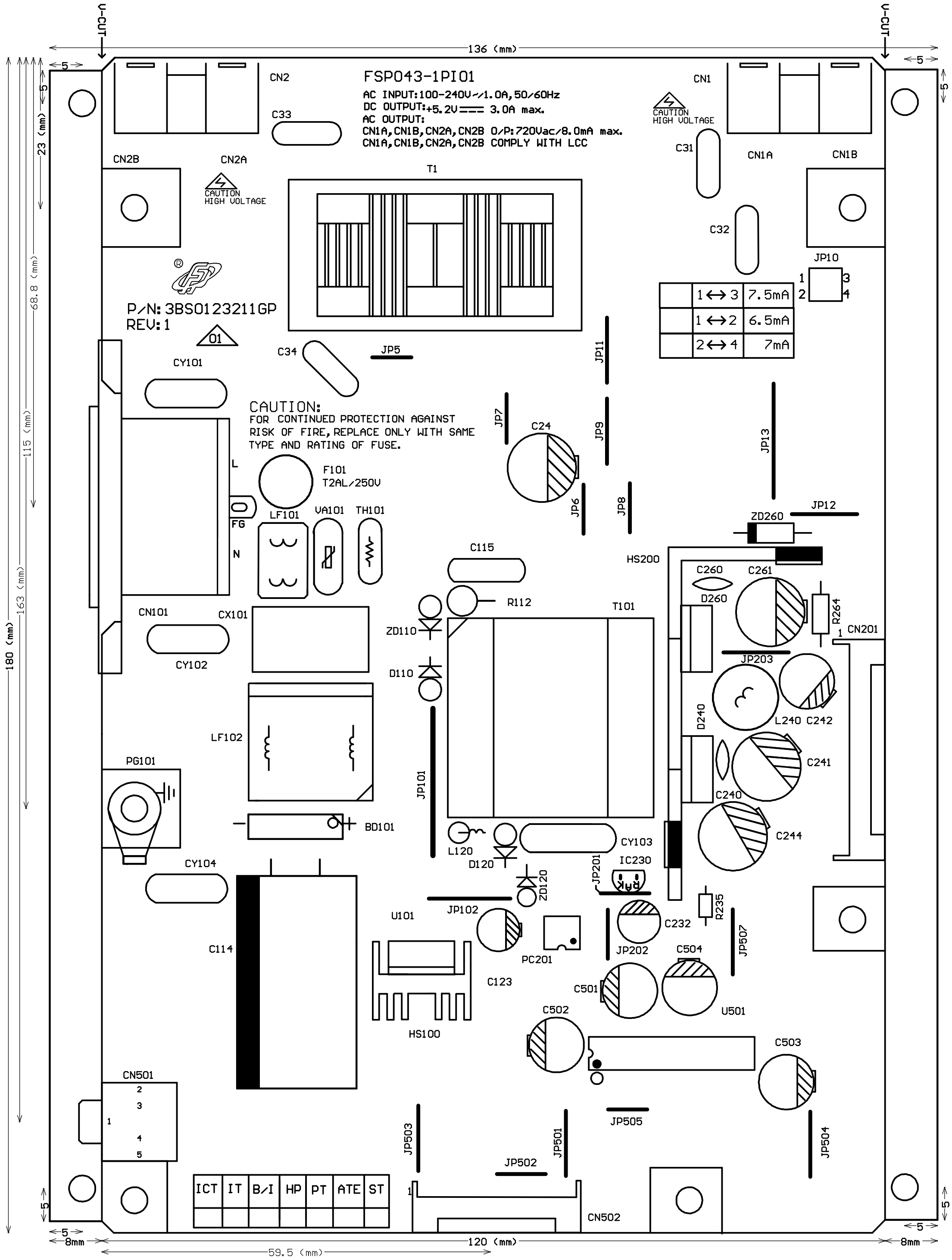
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P/N: 3BS0123211GP DrillDrawing



FSP043-1PI01 REV:1.01 26-Jan-2006
P/N:3BS0123211GP DrillGuide

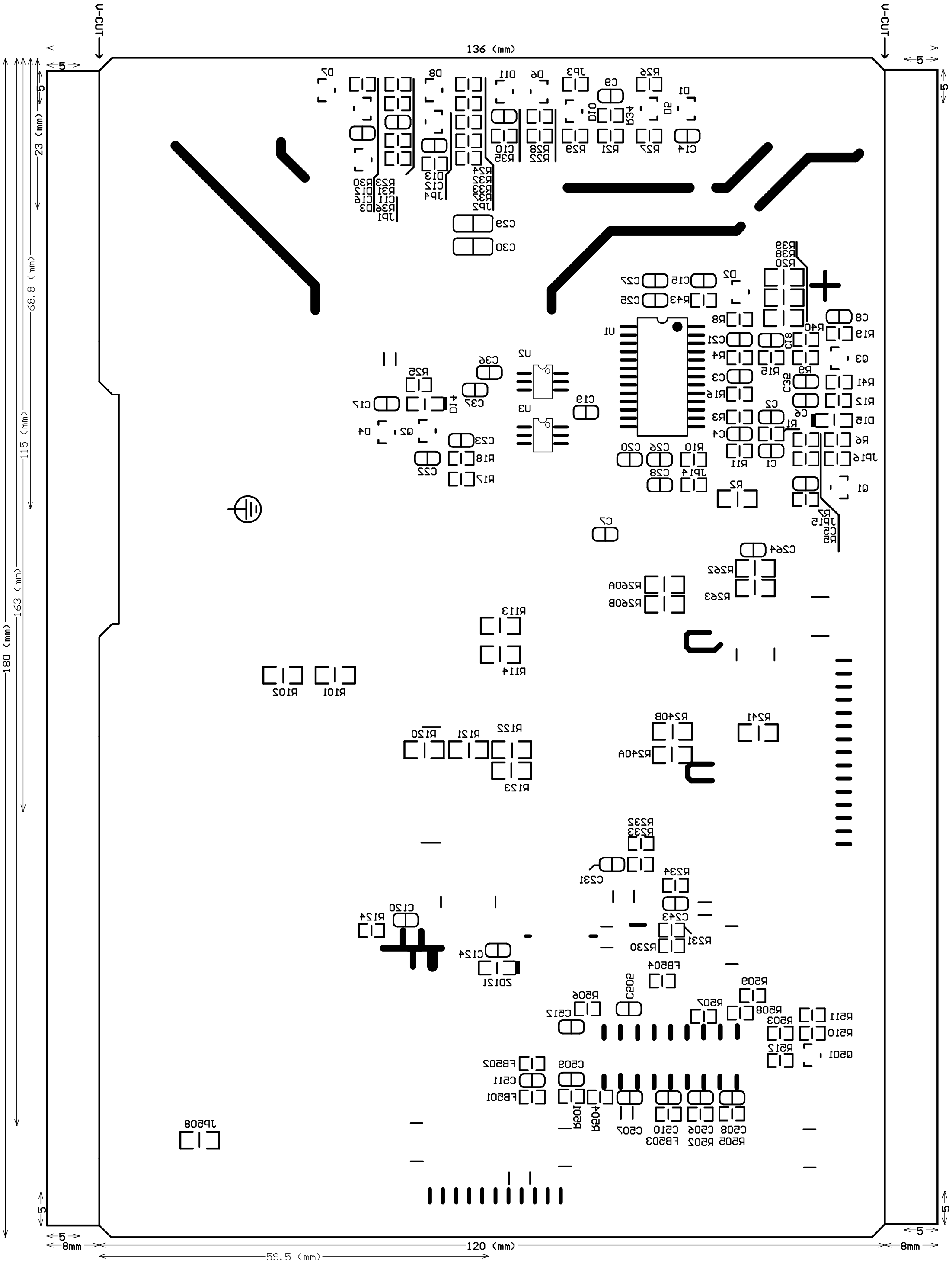


FSP043-1PI01 REV:1.01 26-Jan-2006
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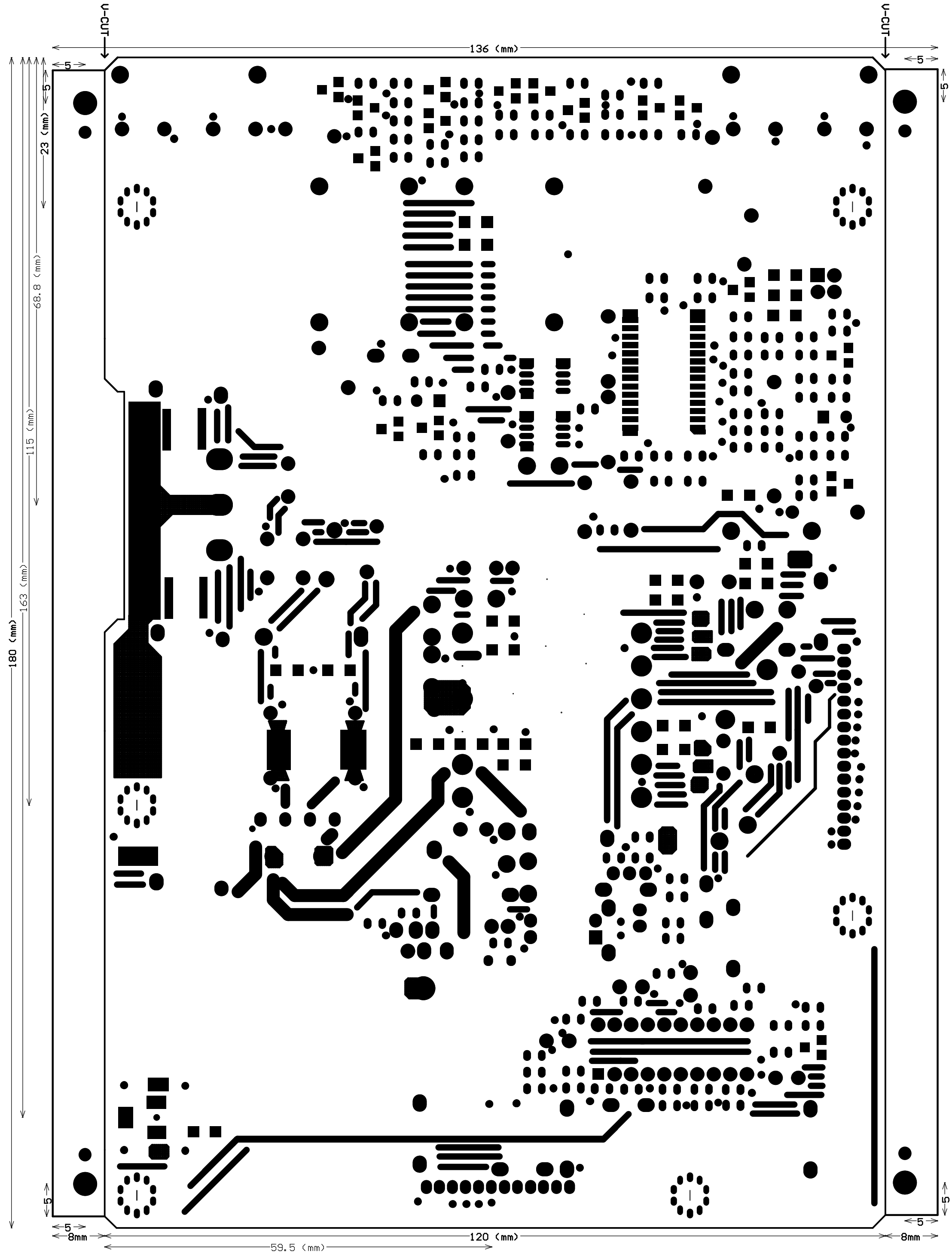


FSP043-1PI01 REV:1.01 26-Jan-2006

P/N:3BS0123211GP Top Overlay



FSP043-1PI01 REV:1.01 26-Jan-2006
P/N:3BS0123211GP Bottom Overlay



FSP043-1PI01 REV:1.01 26-Jan-2006
P/N:3BS0123211GP Bottom Solder Mask

*** Reader's Response***

Dear Readers:

Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content of this Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions and Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Exploded Parts List				
9. Block Diagrams				
10. Schematic Diagrams				
11.PCB Layout Diagrams				

B. Are you satisfied with this Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinions or suggestions regarding this service manual?

Reader's basic dada:

Name:		**Title:**	
Company:			
Add:			
Tel:		**Fax:**	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)